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THE ANALYSIS OF SPINAL FLUID TESTS*

JAMES B. AYER, M.D.
BOSTON

At the risk of being elementary and pedantic, I wish to emphasize certain fundamental principles in diagnosis wherein the examination of the cerebrospinal fluid is of importance. The excuse for such a summary is to be found on every hand, from the query of a writer in a recent number of THE JOURNAL, who wishes an answer as to when lumbar puncture is indicated, to the case in which you and I have obtained unusual findings which we cannot easily interpret. Nor do the textbooks on fluid diagnosis always clarify the situation, for, on turning to the description of the fluid in brain tumor, we read: "In tumors of the brain, the amount of cerebrospinal fluid may or may not be increased. . . . The cells are usually increased. . . . The globulin as a rule is not increased but may be slightly increased. . . . The Lange test may show changes." True, but not very helpful; in fact, rather bewildering. The diagnostician wishes help; he would like dependable facts as nearly pathognomonic as possible, and he is annoyed and disheartened to find that a luetic zone colloidal gold reaction or lymphocytosis does not necessarily signify syphilis. He is accustomed to accepting the biopsy criterion of malignancy or the report of Klebs-Loeffler or tubercle bacilli as facts on which he may rely, but the spinal fluid reports he finds elusive; the abnormalities are not pathognomonic; they require study and, before their full value is apparent, they must be interpreted in connection with the clinical features of the given case.

From discussions with physicians, from the literature, from reports on cases and from my own experience, I am of the opinion that spinal fluid findings often do not yield as much value as is possible; that at times the chief significance of the fluid tests is missed, and that occasionally misinterpretation leads to wholly erroneous conclusions.

If this is true, where lies the fault? Occasionally, inadequacy of laboratory facilities is a fair excuse for an insufficient number of tests, but a far greater fault lies in the analysis of the recognized tests, an analysis which must be made not in the laboratory but by the physician who knows the individual from whom the fluid was obtained. My belief further is that too many persons are concerned with the fluid. A system by which one physician advises lumbar puncture, an assistant in the syphilis department makes the puncture, two laboratories examine the fluid and the neurologist is then called in to express an opinion on the combined findings, is not conducive to thorough or accurate analysis. In short, my thesis is this: An adequate number of tests carried out so far as possible by the physician who knows the clinical story, who himself performs the puncture, and who himself analyzes the findings will yield a maximum of information.

The whole subject of cerebrospinal fluid, so far as its employment in diagnosis is concerned, dates back only three decades. Its general use may be considered as of less than two decades. During this time, one test after another has been advocated, until now an array of examinations appears in textbooks on the subject, some of them requiring refinement of apparatus and ability of interpretation that are staggering to the clinician. A number of tests have been put forward as pathognomonic for certain diseases (the colloidal gold reaction is a good example), but routine use has forced on us the fact that such a simple type of interpretation is usually a delusion, and that the only safe rule is an intelligent correlation of tests.

With a view to simplification of the subject, the tests that in my opinion yield information of greatest value should be enumerated. Not all of these need be employed in every case, but in every diagnostic lumbar puncture one should be prepared to use any or all as indicated. They are:

1. Initial pressure and pressure studies, the latter chiefly to determine presence or absence of block.
2. Naked eye study for color, turbidity, clotting and presence of blood, the amount being compared in three successive tubes.
3. The total number and differential count of cells.
4. A general protein precipitant, such as trichloracetic acid or alcohol and, if practicable, a quantitative determination as with sulphosalicylic acid.
5. The globulin ring test with saturated ammonium sulphate, which is highly satisfactory.
6. The Wassermann test.
7. Gold chloride test of Lange or benzoin test of Guillain.
8. Direct smears and cultures of bacteria and, rarely, inoculation.
9. Quantitative sugar and chlorides and nonprotein nitrogen.

It will be seen that the list includes tests which may be grouped under the following headings: physical, chemical, histologic, biologic and bacteriologic, and at first glance may be considered a rather formidable array. Experience shows, however, that a keen analysis of the first six will give by far the most information and it will be noted that of these six, all except the Wassermann test may be carried out by any physician who has the ability to perform a lumbar puncture. Colloidal tests, quantitative chemical studies and bacteri-

* Chairman's address, read before the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

ologic technic play a real part in thorough analysis of an appropriate case, but I maintain that without them a very good conception of most cases can be obtained. There is no question in my mind that the simplest tests, carried out and analyzed by the individual performing the puncture who also knows the patient, are of the greatest value.

REPORT OF CASES

In order to bring out the point I would make, namely, that the test should be adjusted to the individual case and that analysis should be with the physician who knows the clinical aspects, brief reference to the following situations will be helpful:

CASE 1.—A patient presenting ataxic paraplegia was referred to me for treatment of neurosyphilis. It was stated that there was a history of syphilis and that the fluid showed a positive globulin reaction, although cells were absent and the Wassermann reaction was negative, as was also the blood Wassermann test.

On inquiring, it was learned that no pressure studies had been made. Lumbar puncture was therefore repeated and a block demonstrated by jugular compression. The total protein was found high, much higher than the globulin test alone suggested. By adding the appropriate tests, we were able to make a definite diagnosis of cord compression, and laminectomy revealed a nonsyphilitic tumor.

The following case represents erroneous conclusions based on hasty judgment, my own mistake throughout. It exhibits the necessity of extreme care as to details:

CASE 2.—In a patient presenting an atrophic paraplegia with diminution of sensation below the second lumbar segment, although the tendon reflexes of the lower extremities were absent, a bilateral Babinski reflex was repeatedly present. Lumbar puncture yielded a deep yellow fluid, which clotted *en masse*, making a diagnosis of spinal tumor evident. But the location of the tumor was not so certain, as some signs pointed to the lumbar cord and some to the cauda equina. It was decided to puncture again between the two possible situations, i. e., between the first lumbar and the twelfth thoracic vertebrae, and if the fluid proved the same as previously obtained from between the fourth and fifth lumbar vertebrae, operation would be directed to the spinal cord localization.

With the patient under ether, ready for laminectomy, this was done, and a yellow fluid obtained. Operation was consequently misdirected to an exposure of the lumbar cord, the tumor being subsequently found attached to a nerve root of the cauda.

The error was twofold: dynamic studies for block were not carried out, and a difference in depth of yellow in the two fluids was not noted until later. More striking still, the protein content of the fluid below the tumor was 2,187 mg. per hundred cubic centimeters, and that above, 720. The fluids were similar but not the same.

Needless to say, at that time (1921), we did not have lipiodol, and the presence of xanthochromia above tumors of the cauda was not recognized.

The following case is most instructive:

CASE 3.—A young woman was referred to the Massachusetts General Hospital for treatment of neurosyphilis, because the process was progressive in spite of seemingly adequate treatment. The condition was essentially an ataxic paraplegia.

Our spinal fluid tests showed typical findings of neurosyphilis, but the Queckenstedt test was positive. Believing that we dealt with a localized syphilitic meningitis, we persevered with more antisyphilitic medication. With the patient's increasing disability, operation was finally decided on with the expectation of finding a gumma. Instead, a nonsyphilitic meningioma was enucleated, with marked clinical improvement.

The subsequent fluid findings are of interest, because on two occasions the lumbar fluid, now showing no evidence of subarachnoid block, exhibited more intense syphilitic reactions than before the removal of the tumor. This, together with the fact that the cisternal fluid before operation gave more cells than the lumbar, strongly suggests that the patient was the subject of latent cerebral syphilis plus cord tumor.

If we had not carried out dynamic studies in this case obstruction in the spinal fluid pathway would have been overlooked and much more valuable time would have been wasted in pursuing an attack on the syphilitic process which, while undoubtedly present, was obviously not the cause of the immediate symptoms.

The following is a case of a different type, in which correct interpretation of fluid findings was a valuable aid to therapy:

CASE 4.—A man, aged 32, had been operated on with a simple mastoid operation (right). Because of persistent fever and development of meningeal symptoms, he was referred to Dr. Harold Walker. It was noted that he had stiff neck, a positive Kernig sign and weakness of the right external ocular muscle; he was mentally clear. Spinal fluid findings showed a purulent fluid under a pressure of 350 mm. Dynamic studies were of particular interest, for on compression of the right internal jugular vein almost no rise in pressure was obtained, while compression of the left jugular caused a prompt and considerable rise in pressure. The protein was 196 mg. per hundred cubic centimeters, and the sugar, 0.031. Bacteria could not be demonstrated in film or culture.

These tests indicated a well marked meningeal irritation but not necessarily a bacterial meningitis, as shown by the persistent sugar and by the fact that bacteria could not be demonstrated. Right lateral sinus thrombosis was suggested by the dynamic studies. Operation was therefore directed to the uncovering of the sinus which appeared intact, although showing epidural granulations. The internal jugular vein was ligated. On three subsequent occasions within the next week, purulent fluid was obtained but was always bacteria free and showed a rising sugar content. Later, because of intermittent fever and chills, a further examination of the sinus was made, when a large mural thrombus was found. Convalescence was soon established, and the fluid two weeks after the last operation showed only the remnants of the old meningeal irritation.

The spinal fluid examination here showed evidence of sinus thrombosis before it was clinically apparent. Also the fluid, while indicative of profound meningeal irritation, was always compatible with aseptic meningitis. Had we not heeded the fluid findings we might reasonably, as was more than once suggested, have investigated the brain for abscess, in which case a fatal meningitis would almost certainly have resulted.

The foregoing brief protocols demonstrate, I believe, the necessity of intellectual effort in interpreting the fluid tests. In no one of these cases, and these are only a few of similar problems, could the tests have been adequately interpreted in the laboratory alone.

Hardly less important than positive findings which help in diagnosis are negative findings in cases in which positive findings are expected. I remember years ago a patient who presented a typical clinical picture of tuberculous meningitis in whom the fluid was entirely negative. When she died shortly afterward, the postmortem examination showed the cause of her cranial nerve paralyses to be due to multiple myeloma of the skull, affecting the cranial nerves outside the dura. It is unreasonable to believe that tuberculous meningitis can occur without giving a pathologic fluid.

In cord tumor in which spinal cord compression exists, it has been my experience that the fluid is always pathologic. A normal spinal fluid, especially normal dynamic studies and normal protein, render the diagnosis of cord compression most unlikely. While negative tests are frequently encountered in neurosyphilis,

they are found especially in the late degenerative stage of the disease. With few exceptions, negative tests are incompatible with active advancing neurosyphilis.

That we should be careful not to make our tests agree with clinical preconceptions is illustrated by the following case:

CASE 5.—A man, aged 51, presented a picture which to his physician was that of an early general paralysis. This diagnosis was supported by the fact that a positive blood Wassermann reaction was obtained. I was asked to see him to corroborate the diagnosis, and as part of this examination made a lumbar puncture. The fluid was under slightly increased pressure (310 mm.), was slightly orange, and showed, microscopically, red corpuscles in various stages of degeneration and 131 white corpuscles, equally divided between polymorphonuclear leukocytes, large mononuclear cells and lymphocytes. The Wassermann reaction was negative. The colloidal gold reaction was 0000000000.

Further history elicited the fact that the patient's mental confusion was of sudden occurrence ten days previously, and examination showed that the mental picture was really an aphasia. Right lateral homonymous hemianopia was another finding, which finally turned the diagnosis from general paralysis to cerebral hemorrhage, a condition of quite different prognostic and therapeutic significance.

SUMMARY

I have endeavored to bring out two points: 1. Analysis of all significant data is a necessity, if full value is to be obtained from spinal fluid test. 2. The simpler tests of known worth, if properly analyzed and correlated with the clinical picture of the individual patient, will give the most information.

475 Commonwealth Avenue.

THE TREATMENT OF PERIPHERAL VASCULAR DISTURBANCES OF THE EXTREMITIES*

GEORGE E. BROWN, M.D.
ROCHESTER, MINN.

[EDITORIAL NOTE.—This paper, together with the paper by Dr. Miller, which follows it, concludes the symposium on "Cardiovascular Hypertensive Disease and Its Treatment." The last issue of THE JOURNAL contained the papers by Dr. Major, Dr. Robinson and Drs. James, Laughton and Macallum.]

There are two main types of vascular disturbances affecting the extremities, which are classifiable on the basis of their functional or organic origin (table 1). The functional or vasomotor disturbances fall in two clinical groups, as the vasomotor mechanism is capable of only two responses, vasoconstriction and vasodilatation. When the vasomotor balance is so adjusted as to fulfil just the local circulatory requirements, the function of the mechanism is normal. When the vasomotor balance of the limb is preponderantly toward the vasoconstrictor side and the blood flow is diminished, the surface temperature is reduced and the limb is frequently pale or cyanotic. The degree of coldness and of pallor or cyanosis of the extremity depends on the amount or degree of vasoconstriction. When vasoconstriction occurs in attacks in the hands or feet with well defined local color changes, subjective symptoms and, frequently, trophic disturbances, the condition is recognized as Raynaud's disease. Milder vasospastic disturbances are designated as dead finger, or white finger, acrocyanosis or acro-asphyxia. The condition characterized by intermittent attacks of undue vasodilatation of a peripheral vascular segment with redness and subjective symptoms of heat is known as erythromelalgia. There are probably two types of erythromelalgia; a primary or essential form, existing in the absence of any demonstrable organic vascular disease, and a secondary form, appearing in association with arteriosclerosis. The latter group may lack the objective evidence of increased vasodilatation but, subjectively, intermittent attacks of a burning sensation in the extremities are noted by the patient. The symptoms have more the features of paresthesia than disturbance in the blood flow.

The organic or obliterative lesions involving the extremities are mainly of two types: thrombo-angiitis obliterans, or Buerger's disease, and endarteritis obliterans, or arteriosclerosis with or without superimposed thrombosis. The so-called diabetic gangrene has a similar arteriosclerotic basis. Thrombo-angiitis obliterans is a chronic thrombosing process, usually involving the peripheral arteries and veins. The early pathologic picture shows a soft red clot filling the vascular lumen, and containing erythrocytes and fibrin. There are subsequent stages of fibroblastic organization and canalization. Aside from a diffuse cellular infiltration of the arterial coats, suggesting an infectious basis, there is no evidence of any of the changes involving the intima or media that characterize endarteritis obliterans. Buerger[1] was the first to point out this essential difference in the two diseases. In arteriosclerosis of the peripheral vessels, the lumen is gradually narrowed by the proliferation of the intima. Degeneration of the muscle fibers and the deposition of calcium are the usual sequence of events. The superimposition of a simple thrombus usually precedes the advent of gangrene. The cellular nature of the clot so characteristic of that observed in thrombo-angiitis obliterans is lacking. The process is degenerative and lacks the evidence of an infectious basis seen in thrombo-angiitis obliterans.

REQUISITES OF THERAPY IN THE VASOMOTOR DISTURBANCES

It is evident that treatment will vary in the vasomotor and organic types of case. In the vasomotor disturbances dependent on vasoconstriction, treatment is considered from the medical and surgical standpoints. The medical measures consist in protection from cold, which in the mild cases is usually sufficient. Frequently, change of climate is indicated. If psychic disturbances are aggravating the condition, readjustment is attempted. There is no medical treatment that prevents or relieves vascular spasm, and the results of such therapy have been uniformly disappointing.

The relief from vascular spasm of the extremities by measures which would destroy, or cause interference in, the vasomotor paths has been a surgical goal long sought. The so-called stripping operation, as carried out by Jaboulay[2] and Leriche,[3] has been performed by many surgeons in a heterogeneous group of cases of a vascular and neurogenic nature. Sistrunk[4] has carried out this type of operation in a series of cases of vascular disease. In theory, this operation would be indicated

* From the Division of Medicine, Mayo Clinic and the Mayo Foundation.
* Read before the Section on Pharmacology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Buerger, Leo: The Circulatory Disturbances of the Extremities, Including Gangrene, Vasomotor and Trophic Disorders, Philadelphia, W. B. Saunders Company, 1924.
2. Jaboulay, quoted by Leriche, footnote 3.
3. Leriche, René: De la sympathectomie peri-artérielle et de ses résultats, Presse méd. **25**: 513 (Sept. 10) 1917.
4. Sistrunk, W. E.: Personal communication to the author.

in the vasomotor disturbances dependent on vasoconstriction, such as Raynaud's disease. However, the results of this procedure have not been entirely satisfactory, and the investigation on the course and distribution of the vasomotor fibers to the vessels of the extremities provides an adequate explanation for its failure. It has been shown that the vasomotor fibers do not enter the artery at this point of origin but at successively lower levels. Thus, only a small portion of the fibers could be destroyed by the removal of a small segment of the adventitial layer of the artery. During the last year it was observed that, following the removal of the second, third and fourth lumbar ganglions by Adson [5] in cases of spastic paraplegia, striking vasodilatation occurred in the feet. This was shown by the increased rate of heat elimination, as determined by the foot calorimeter and the increased surface temperature of the feet. The vasodilatation was shown to be uniform and uninterrupted for the period of observation (from two to six weeks), and its presence was confirmed by clinical findings; the feet became dry and hot, and sweating was absent. Because of these observations, it was felt that a similar procedure carried out in Raynaud's disease affecting the feet should theoretically relieve the vascular spasm and produce cure.

TABLE 1.—*Tentative Clinical Classification of Arterial Vascular Diseases* *

Functional or Vasomotor types	Local distribution	Vasoconstricting types	1. Multiple-phase color reaction; Raynaud's disease
			2. One-phase color reaction; acrocyanosis, dead finger, local syncope
		Vasodilating types	Erythromelalgia
	General distribution	Vasoconstricting types	Primary or essential hypertension, early stages
		Vasodilating types	Primary or essential hypotension
Organic types	Local distribution	1. Arteriosclerosis, endarteritis obliterans, with or without thrombosis; diabetic gangrene	
		2. Thrombo-angiitis obliterans	
		3. Simple thrombosis or embolism	
		4. Arteritis of known infectious origin (rheumatic, syphilitic)	
		5. Aneurysm with or without thrombosis	
	General distribution	Arteriosclerosis	
		1. Primary	
		2. Secondary to hypertension	

* In our experience, this classification will cover practically all the usual forms of arterial vascular disease.

SURGICAL TREATMENT OF RAYNAUD'S DISEASE

To date, three patients with Raynaud's disease affecting the lower extremities have been operated on by Adson; he removed the second, third and fourth lumbar ganglions and the sympathetic trunk, and, in addition, stripped the perivascular tissue from the common iliac arteries to insure complete removal of the vasomotor fibers.[6] The results obtained have been striking, and clinical cure has persisted to date. The feet became hot and progressively drier, and sweating was absent for variable distances above the knee. Subjectively, mild symptoms of burning or hot feet were noted by the patient. Vasomotor responses to cold were diminished or absent in the feet. The pulse of the dorsalis pedis and posterior tibial arteries was full and throbbing. No hyperesthesia or muscular or sciatic tenderness followed the operation. There has been no recurrence of the symptoms of the disease in these patients to date. The longest postoperative period has been one year. For relief of Raynaud's disease of the upper extremities, removal of the inferior cervical ganglions would be necessary. This has been done by Adson in one case, and demonstrable increases in surface temperature of the corresponding hand was noted after operation. Further work in this connection will be necessary before positive statements can be made.

The special calorimetric studies undertaken with the foot calorimeter showed increases in the amount of heat given off from the feet, varying from 15 to 200 per cent, calculated as the number of small calories given off for each minute for each square inch of surface area of foot. The increase in surface temperature of the feet was between 0.7 and 13.8 C., following operation (table 2).

ERYTHROMELALGIA

The treatment of erythromelalgia has been quite disappointing, both medically and surgically. In one patient, perivascular stripping was carried out by Sistrunk for possible relief of symptoms, but it was without effect. In the secondary form of erythromelalgia with paresthesia of a burning nature, acetylsalicylic acid or cinchophen will usually give temporary relief.

ORGANIC VASCULAR DISEASE

The treatment of the organic or obliterative disease affecting the extremities has three possible objects: (1) prophylaxis, (2) relief of pain and (3) increase in the peripheral circulation.

Medical Measures.—Prophylactic measures are of great importance in preventing or delaying the onset of gangrene. For variable periods of time, with the blood supply diminished, the margin of safety for the extremity is narrow. Slight degrees of trauma and skin infections may produce disastrous sequelae. The diabetic patient with endarteritic lesions of the feet demands special consideration, as emphasized by Joslin [7] and others. Similar preventive measures are necessary in cases of thrombo-angiitis obliterans, and their importance to the patient cannot be overemphasized. While proof is lacking that tobacco is the etiologic agent in thrombo-angiitis obliterans, there is some reason to believe that as a vascular toxin it contributes to the disease, and complete abstinence or marked restriction

TABLE 2.—*Skin Temperature in Raynaud's Disease Before and After Operation*

Date, 1925	Right First Toe	Right Dorsal Surface	Left First Toe	Left Dorsal Surface	Pulse	Mouth Temperature	Room Temperature	Comment
10/29	25.0	28.2	24.1	27.8	..	....	....	Feet cold, swollen
	29.0	28.1	24.1	27.7	90	37.0	22.7	and moist
11/ 5	....	....	22.2	24.8	69	36.6	22.3	Feet cold, swollen
			23.1	24.7				and moist
11/ 7	....	....	....	....	..	....	....	Lumbar ganglionectomy
11/14	24.7	21.8	25.3	....	90	37.4	22.0	Feet warm, dry and
	24.5	21.4	25.0					pink; scaly
11/21	25.3	24.7	24.2	24.5	74	37.2	22.0	Feet warm, dry and
	25.3	24.8	24.2	24.5				pink
1926 1/19	26.1	25.5	26.4	25.7	80	36.6	23.0	Feet warm, dry and
	26.3	25.6	26.6	25.8				pink; less scaly

5. Brown, G. E., and Adson, A. W.: Calorimetric Studies of the Extremities Following Lumbar Sympathectomy, Am. J. M. Sc. **170**: 232-240 (Aug.) 1925.

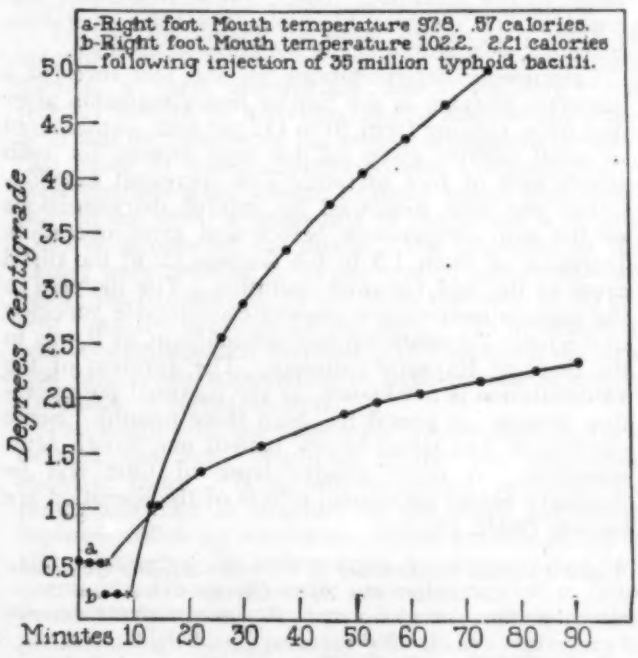
6. Adson, A. W., and Brown, G. E.: Treatment of Raynaud's Disease by Lumbar Ramisection and Ganglionectomy, and Perivascular Sympathetic Neurectomy of the Common Iliacs, J. A. M. A. **84**: 1908-1910 (June 20) 1925.

7. Joslin, E. P.: The Treatment of Diabetes Mellitus, with Observations Upon the Disease Based on Thirteen Hundred Cases, ed. 4, Philadelphia, Lea and Febiger, 1917.

of its use is indicated. A systematic search for foci of infection is carried out as a routine, and infection in the teeth, tonsils and prostate are eliminated because of the pathologic evidence of the infectious nature of the disease. The relief of pain in thrombo-angiitis obliterans is frequently the major consideration. The pain varies in the different stages, and is almost pathognomonic of the progression of the lesion. The early stages are characterized by claudication associated with pain in the foot and calf, intermittent in character, and brought on by exercise and relieved by rest. Later, with the onset of trophic lesions or gangrene, pain becomes excessive and continuous, breaking down the patient's morale, and reducing him to a pitiable wreck. One often observes such a victim, squatting tailor fashion, holding the diseased foot in his hands, moving it up and down, and continuously rubbing it. Brief snatches of sleep constitute his quota of rest. Relief from this type of pain has been almost unattainable. Opiates are without avail and are attended by great danger because of the possibility of habit formation. Intravenous injection of a 2 per cent solution of sodium citrate has, in our experience, not been satisfactory. Less than 10 per cent of the patients had relief from pain, and that was only transitory. No increase in the local circulation has been demonstrated with calorimetric methods following the administration of citrate. Intravenous injections of radium chloride, in doses of from 25 to 75 micrograms, has given relief from pain for maximal periods of seven days in 50 per cent of a series of fifteen cases. No increase in blood flow could be demonstrated to explain its analgesic action. The chief objection to the use of radium is its almost prohibitive cost. Irradiation of the sacral area by deep roentgen-ray therapy has been advised by Philips and Tunick [8] for the relief of pain. In four cases in which this was done, transitory relief followed in two instances. In our experience, the best medical measure for the relief of pain has been the intravenous injection of typhoid vaccine to produce a mild protein shock. About 75 per cent of a series of fifteen cases showed variable degrees of relief from pain for periods of from one to ten days. Injections have been given at intervals of from one to five days in sufficient dosage to produce febrile reactions of from 2 to 3 degrees C. The basis for its action is not entirely clear, but we have been able to demonstrate by accurate calorimetric methods increases in surface temperature and in the rate of heat elimination of the feet, indicating that an increased blood supply may be the important factor, as shown in the accompanying chart.

Physical measures to increase the volume flow of blood to the extremity consist of postural exercises, hot light therapy, and contrast baths for the feet. These measures, when carried out consistently, are productive of great good. Buerger, in his recent book, has described procedures in detail, and their efficacy can be verified in many cases in the pregangrenous and early gangrenous stages of the disease. The healing of amputated limbs can be helped greatly by the prolonged application of mild heat in the form of electric lights. Great care must be taken to prevent burns from the application of heat, as the circulation to the skin in these cases is impaired, and lesser degrees of heat are required to injure this tissue than normally. The use of contrast baths is contraindicated in the presence of gangrene or open lesions, but this measure has great usefulness in the early stage or stage of claudication, and constitutes a form of vascular exercise that produces symptomatic improvement in early cases in both types of organic arterial disease of the extremities. The intravenous injection of foreign proteins to produce mild degrees of systemic fever has been the most efficatious measure for increasing local circulation. This measure alone, and when carried out in combination with physical measures, will facilitate the healing of the stump after low amputation.

Surgical Measures.—Because of the striking results obtained from lumbar sympathetic ganglionectomy in vasomotor disturbances, it was thought justifiable to submit a patient with thrombo-angiitis obliterans to this operation. The basis of this disease is, of course, entirely different, and good results, if any, would rest on different considerations. It was observed in many of these cases that marked vasomotor disturbances of a vasoconstrictor type are superimposed on the organic



Increased heat elimination and blood flow in the feet following the intravenous injection of foreign protein in thrombo-angiitis obliterans.

lesion, and color changes quite similar to those in Raynaud's disease are intermittently present, indicating vasoconstriction. Five patients with thrombo-angiitis obliterans have been operated on to date.[9] Bilateral lumbar sympathetic ganglionectomy with perivascular neurectomy of the common iliac arteries was performed by Adson. These cases represented fairly advanced stages of the disease. The first patient had a large trophic ulcer just proximal to the toes, measuring 4 by 5 cm. The feet were cold, and marked atrophy of the leg muscles was present. The pulses of the vessels of both feet were absent. Pain was excessive and continuous, and had prevented sleep for several weeks. The second patient had a small trophic ulcer on the dorsum of the foot with excessive, continuous pain. The main vessels were closed, and the usual color changes were present. In the third case, there was a beginning ulcer on the tip of the first right toe; the main vessels were obliterated. Claudication with pain in the calf and foot appeared after 300 steps. In the

8. Philips, H. B., and Tunick, I. S.: Roentgen-Ray Therapy of Thrombo-Angiitis Obliterans: Preliminary Report, J. A. M. A. 84: 1469-1472 (May 16) 1925.

9. One patient with marked gangrene of the foot died from pneumonia ten days after operation, and tests could not be carried out.

fourth case, amputation had been performed two years previously for gangrene of the right foot. Trophic changes with skin fissure had developed in the left foot, and pain was continuous. Pulsations were absent in the vessels of the foot. The ages of these patients varied from 32 to 45 years. There were no findings by physical or roentgenologic examination of the legs to indicate the presence of arteriosclerosis.

The clinical improvement following the operation was striking. Relief from pain was complete in all the patients and has persisted to date (the first patient was operated on, Dec. 26, 1925). The trophic ulcer in the first case showed healing and granulation within a few days after operation. Healing was complete in ninety days. In the second case, healing of the ulcer was complete in ten days. In the third case, the claudication was relieved but the early lesion on the toe remained tender and red. In the fourth case relief from pain was complete, and there was evidence of increased circulation in the remaining foot. Sciatic tenderness was noted in one instance fourteen days after operation. Sweating disappeared below the knees in all cases.

Calorimetric determinations for the feet revealed a moderate increase in the rate of heat elimination after operation, ranging from 50 to 112 per cent, as measured in small calories given off for each minute for each square inch of foot surface. This increased vasodilatation was also confirmed by careful determinations of the skin temperature before and after operation. Increases of from 1.5 to 6.4 degrees C. in the distal areas of the feet followed operation. The increase in the surface temperature showed considerable variation in the toes; the dilatation was not uniform, as it was in the cases of Raynaud's disease. The duration of the vasodilatation is not known, as the maximal postoperative observation period has been three months. Some diminution was noted in one patient one month after operation. A much greater lapse of time will be necessary before permanent effects of the operation are known (table 3).

TABLE 3.—*Skin Temperature in Thrombo-Angiitis Obliterans Before and After Operation*

	Left			Right					
Date, 1925	Large Toe	Dorsal Surface	Leg	Large Toe	Dorsal Surface	Pulse	Mouth Temperature	Room Temperature	Comment
12/23	28.2 28.2	32.5 32.6	32.2 33.2	27.3 27.3	30.6 30.0	76	97.2	22.0	Left foot cold, pale, ulcer on dorsum, severe pain
12/29	....	....	....	....	....	..	....	....	Lumbar sympathetic neurectomy
1926 1/13	28.7 28.8	34.3 34.5	33.2 33.3	34.2 34.8	33.6 34.0	72	98.6	22.5	Ulcer healed, left foot warm to base of toes; right foot appears normal; both dry; no pain since operation

ENDARTERITIS OBLITERANS

Medical Measures.—Medical treatment of this condition is essentially the same as of thrombo-angiitis obliterans. Protective and prophylactic measures are of the utmost importance in the stage of claudication. Gangrene is usually precipitated by an occluding thrombosis, no means of preventing which is known. Pain in endarteritis obliterans is usually not as severe as in thrombo-angiitis obliterans and is more effectively controlled. Injections of radium chloride intravenously give relief in a certain number of cases. The use of electric heat baths must be carefully supervised, as disastrous burns may result. Intravenous injections of foreign protein have given relief from pain in about 50 per cent of our cases. Because of the age and poor general condition of these patients, all therapeutic measures must be carried out cautiously.

Surgical Measures.—In the presence of gangrene, amputation of the limb is advisable and should be carried out after the acute reaction of the vascular thrombosis has subsided. Lumbar sympathetic ganglionectomy has not been performed in this type of case because of the serious operative risk for the patient with arteriosclerosis. Studies of the available vasodilatation in endarteritis obliterans seem to show little or no vasodilatation, and operative measures to block the vasoconstrictor nerve fibers would probably not be followed by increased blood flow in the extremities. Perivascular stripping has been undertaken in a small group of these cases without demonstrable increase in the blood flow. Several surgeons have reported relief from pain in endarteritis obliterans following this operation.

TABLE 4.—*Comparison of Surface Temperatures During Protein Reaction and Following Lumbar Ganglionectomy*

Case	Disease	Location	Before Treatment	With Typhoid Vaccine	Increase	Following Operation	Increase
1	Raynaud's disease	First toe...	22.1	30.9	8.8	36.3	14.2
		Dorsum....	24.7	31.4	6.7	35.6	10.9
		Leg.....	29.4	30.6	1.2	35.3	5.9
2	Thrombo-angiitis obliterans	First toe...	31.1	30.7	...	32.6	1.5
		Plantar surface....	31.6	31.7	0.1	34.0	2.4
		Leg.....	34.4	34.3	...	33.8	...
3	Thrombo-angiitis obliterans	First toe...	27.5	31.5	4.0	32.0	0.5
		Dorsum....	29.7	32.0	2.3	32.9	3.2
		Leg.....	34.1	35.1	2.0	32.7	...
4	Thrombo-angiitis obliterans	First toe...	28.2	29.7	1.5	29.7	1.5
		Dorsum....	32.6	31.2	...	33.0	0.4
		Leg.....	32.2	30.7	...	34.3	2.1
5	Thrombo-angiitis obliterans	First toe...	26.1	30.7	4.6	30.1	4.0
		Dorsum....	30.3	33.4	3.1	32.6	2.3
		Leg.....	33.8	34.3	0.5	34.5	0.7

SELECTION OF CASES FOR OPERATION

In order to determine the available or potential vasodilatation in the diseased extremity, a method has been evolved which apparently gives important information. Intravenous injections of a foreign protein (typhoid vaccine) are given in doses sufficient to produce a systemic rise of temperature of from 1 to 2 degrees C. The surface temperature of different areas of the feet is determined by the Sheard thermocouple thermometer, coincidently with the systemic or oral temperature. The change in the surface temperature of the foot gives an index of vasodilatation and increased blood flow. In the cases of Raynaud's disease, increases in the surface temperature of the feet of 14 degrees C. have been noted. In thrombo-angiitis obliterans, the increase is variable in different parts of the feet, and is sometimes absent. Comparative studies of the preoperative surface temperature accompanying fever and the postoperative surface temperature showed a fairly close agreement, and marked vasodilating effects from lumbar ganglionectomy need not be looked for if systemic fever has not effected a vasodilator response (table 4).

COMMENT

Medical treatment of Raynaud's disease and allied vasospastic disturbances has not been successful, and theoretical considerations would indicate a surgical procedure that would produce interference with the vasomotor paths to the extremities. Perivascular stripping, in our hands, was not followed by a demonstrable

increase in the blood flow of the extremity. Removal of the second, third and fourth lumbar sympathetic ganglions, and perivascular neurectomy of the common iliac arteries produces this effect in the lower extremities. Probably a permanent vascular dilatation in the feet ensues, with disappearance of the vasoconstricting action. The blood flow is markedly increased, as shown by quantitative studies of the loss of heat and the surface temperature. Trophic ulcers heal rapidly, and signs and symptoms of the disease disappear completely.

The treatment of the chronic organic obliterative diseases of the extremities presents another type of problem, and medical supervision and therapy is of great value in these cases. In thrombo-angiitis obliterans the relief of pain is frequently the paramount consideration, and its relief, for variable periods, can be accomplished in many cases by the intravenous injection of foreign protein or of radium chloride and irradiation of the sacral spine with roentgen rays. In the absence of definite gangrene and when relief from pain is attainable, these patients can be tided over long periods with some hope of circulatory compensation being established. Conservative measures to avoid amputation are necessary, as the disease is bilateral, and double amputation spells economic disaster for these unfortunate men in the active time of life. Early diagnosis is essential. Unfortunately, this disease is not well recognized by physicians generally, as less than 20 per cent of these cases were correctly diagnosed before investigation at the clinic. Valuable time was lost during the period when protective and simple physical measures might have prevented the serious sequelae.

When these patients show beginning trophic disturbances and the usual distressing pain, the operation as performed by Adson seems to offer additional chance of preventing the loss of limbs. With control of pain, amputation can be delayed indefinitely. With the institution of protective and other measures to enhance the circulation of the feet, these patients can acquire a moderate degree of usefulness and activity. The permanence of the vasodilating effects after operation cannot be stated at this time. I am of the opinion that, if amputation is eventually necessary after lumbar ganglionectomy, it will be permissible at lower levels in the presence of the additional vasodilatation. The selection of suitable cases for operation is most essential, and the use of the protein reaction to determine available vasodilatation seems advisable, as a preoperative test. Comparison of the preoperative rise of surface temperature to protein fever with the postoperative values seems to indicate a fairly close parallelism. It would be futile to attempt the radical operative procedure in the absence of any available dilating vessels. Patients with endarteritis obliterans show slight or no vasodilatation, and the age and general condition of these older patients, with frequently generalized degenerative lesions of the heart or kidney, contraindicate an operative procedure of this magnitude.

Epilepsy.—The epileptic fit is nothing else than a symptom; no such disease as epilepsy exists, or can possibly exist; even by resort to such epithets as "essential" or "idiopathic" epilepsy we in no sense add a term of differentiating quality, since the pathological element constituting the disease-component is not thereby expressed. . . . An individual may have one fit only in the course of his life, or a few, at the widest intervals, as in the case of a lady who had an epileptic fit at the age of 14, when her period of reproductive activity commenced, and another at 44, when it closed.—Wilson, S. A. K.: *Brit. M. J.*, July 3, 1926.

THE VISCERAL MANIFESTATIONS OF CARDIOVASCULAR HYPERTENSIVE DISEASE

DIAGNOSIS AND TREATMENT *

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The visceral manifestations of hypertension arise, in a large measure, from the arterial changes that accompany this condition. These changes are secondary to, and apparently the result of, the hypertension, or are perhaps excited by the same agency responsible for the vascular spasm. The renal changes usually observed in advanced hypertension are thought to be secondary to changes in the arterioles of the kidney. Neuroretinitis is not observed in arteriosclerosis without hypertension, nor is it dependent on impaired kidney function alone. It is in some manner associated with hypertension and the accompanying renal changes.[1]

Next to the kidney the heart suffers as a result of increased work, actual changes in the heart muscle playing a very unimportant rôle. Fishberg [2] has recently studied in a comprehensive manner the character and distribution of the arterial changes in seventy-two cases of essential hypertension. Histologically, these changes were similar to those found physiologically in the aged: a thickening of the intima with progressive atrophy of the media. The arterioles of the kidney were involved in 65 per cent of his seventy-two cases; the pancreas, in 50 per cent; the liver, in 30 per cent, and the brain, in 20 per cent. The myocardium was very infrequently involved. This supports the view that cardiac decompensation in hypertension is largely the result of increased load.

The relation of the kidney to hypertension is still a debated question. Nephritis is the one established etiologic factor. It is only necessary to recall the progressive rise in pressure in the acute glomerular nephritis following scarlatina. What actually occurs is still a mystery. Its rather rapid development and frequently transitory character strongly suggest a functional disturbance. It was formerly thought that persistent high blood pressure was always secondary to renal changes. During the early years of hypertension, there is usually no clinical or laboratory evidence of nephritis. If such a patient is followed, very frequently albumin and casts will appear in the urine. Eventually the urinary findings may be characteristic of nephritis. With this there may be some impairment of kidney function, as shown by the phenolsulphonphthalein test or the blood chemical determinations. This group, in which renal changes, if present, appear late in the disease, is now designated as essential hypertension, the appearance of kidney disturbance being considered secondary to the high blood pressure and arterial changes. The vast majority of hypertension patients fall in this group.

With this evidence, we have not necessarily eliminated the kidney as a factor. The term essential hypertension is not explanatory. It is merely a term employed to exclude the kidney as the exciting cause. The mere

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Wagener, H. P., and Keith, N. M.: Cases of Marked Hypertension, Adequate Renal Function and Neuroretinitis, Arch. Int. Med. **34**: 374 (Sept.) 1924. O'Hare, J. P., and Walker, W. G.: Arteriosclerosis and Hypertension, ibid. **33**: 343 (March) 1924.

2. Fishberg, A. M.: Anatomic Findings in Essential Hypertension, Arch. Int. Med. **35**: 650 (May) 1925.

fact that a kidney responds in a normal manner to our present functional tests does not prove that all the varied products of protein metabolism are being properly eliminated. At present chemical examination of the blood provides fairly accurate quantitative determination of only the urea nitrogen, uric acid, creatinine and total nonprotein nitrogen. The identity of the nitrogen compounds exclusive of those mentioned cannot at present be determined. It is possible that some of the pressor amines, as tyramine or guanidine, may play a rôle in hypertension. Major [3] has suggested that guanidine may play a part. With available methods, he was unable to demonstrate an increase of this substance in the blood of patients with high blood pressure. The advancement of blood chemical determinations may eventually throw light on the subject. Meanwhile, we may speculate that this hypothetic pressor agent may be eliminated with great difficulty through the kidney. With only slight impairment of the kidney not detectable by present methods of examination, it may be retained in the blood. This hypothetic renal disturbance may be slowly progressive, finally reaching a point at which it may be recognized by the clinician. As hypertension develops in acute nephritis, we should be loath to reject the kidney as a possible factor in chronic hypertension.

SIGNS AND SYMPTOMS

It is scarcely necessary to discuss the signs and symptoms arising from hypertension. The cardiac, ocular and cerebral disturbances are familiar to all.

PROGNOSIS

The two most frequent causes of disability or death are cerebral hemorrhage and cardiac decompensation. Termination by uremia is relatively infrequent.

It is impossible to make an accurate prognosis in the ordinary ambulatory hypertensive case. Patients with a systolic pressure of 200 mm. or more may live comfortably for many years. Others with a much lower pressure may acquire a hemiplegia or cardiac decompensation. A great deal depends on the patient's ability and willingness to follow the physician's advice. Obesity or hard manual labor predisposes to cardiac decompensation. The more marked the renal changes, the more grave the prognosis.

During sleep, the blood pressure falls.[4] This raises the question of why cerebral hemorrhage occurs so frequently at night. Recently, McWilliam [5] has studied the effect of dreams on blood pressure. The blood pressure after a person awakens from a disturbing dream may be from 40 to 50 mm. above the normal level. The effect on blood pressure of a nightmare may be greater than that of any experienced during waking hours. This raises the question of bad dreams playing a rôle in the frequent development of hemiplegia during sleep.

Life insurance companies have made a careful study of the effect of increased blood pressure on longevity. As these observations run into the thousands, such tables may be accepted as the best available evidence. On the basis of 100 as the expected death rate, the following figures show the rate in hypertension: The maximum systolic pressure at which a person, aged 20, is accepted without penalty, is 137 mm. The death rate with a pressure of 140 mm. is 120; 150 mm., 145; and 160 mm., 190. The maximum acceptable systolic pressure at 40 years is 144 mm. With a systolic pressure of 150 mm., the death rate is 130; and with 160 mm., 160. The maximum acceptable pressure for 55 years is 150 mm. With a systolic pressure of 155 mm., the rate is 120; with 165 mm., 155; and 175 mm., 200. The accompanying table gives a brief summary of the observations. Here again the expected death rate is 100.

Observations of Hypertension Rates, Using One Hundred As Expected Death Rate

From 10 to 14 mm. above average for age	114
From 15 to 24 mm. above average for age	181
From 25 to 34 mm. above average for age	205
From 35 to 44 mm. above average for age	246
From 45 to 54 mm. above average for age	254

On the other hand, in a group of 627 men, aged from 40 to 60 with systolic pressure of 105 to 110 mm., the mortality was 56 in place of the expected 100. These figures indicate that increased blood pressure deserves serious consideration, as it definitely shortens life.

TREATMENT

Until the causation of hypertension is determined, preventive measures are largely speculative. Excessive eating of meat, intestinal intoxication, focal infections and the strain of modern life have all been mentioned as etiologic factors. Evidence of their relationship, however, is lacking.

The active treatment of hypertension, to say the least, is unsatisfactory. Reported beneficial measures have failed to take cognizance of the extreme variation of blood pressure in untreated patients. When a patient with hypertension tells me that his friends are being cured by some special method of treatment, I urge him to try it, only requesting that he report to me when cured. The results have always been the same—an optimistic patient with unchanged pressure. The innumerable therapeutic errors of the past can be traced largely to failure to consider the hopeful psychology of the sick, and lack of knowledge of the course of untreated disease. In hypertension, fluctuations in blood pressure are so marked and unexpected that before any therapeutic measures are undertaken, the patient should be kept under observation for several weeks with frequent pressure readings and these compared with a similar series of readings during or after treatment. During treatment, the patient's manner of life should be the same as in the control period. To place a patient in bed during the period of treatment and compare the readings with those when he is active is futile, if we are endeavoring to acquire real evidence.

Mosenthal and Short [6] have studied the effect of short periods of rest on a series of fifty patients with hypertension. In one patient, the systolic pressure dropped from 244 to 200 mm. after a ten minutes' rest. Eighteen patients in this series showed a fall in systolic pressure of 23 mm. or more after periods of rest varying from seven to ninety minutes. These authors report another case in which, following a game of cards, the pressure rose from 170 to 202 mm. Not infrequently a nervous patient, solicitous in regard to his condition, will show a systolic pressure of, we will say, 180 mm. If the arm band is kept in place and the patient engaged in conversation, not infrequently the pressure will fall 20 points or more. Twenty-five unselected records of patients with hypertension were taken from our files,

3. Major, R. H.: Am. J. M. Sc. **170**: 228 (Aug.) 1925.
4. Blankenhorn, M. A., and Campbell, H. E.: Am. J. Physiol. **74**: 115 (Sept.) 1925.
5. McWilliam, J. A.: Brit. M. J. **2**: 1195 (Dec. 22) 1923.
6. Mosenthal, H. O., and Short, J. J.: Am. J. M. Sc. **165**: 531 (April) 1923.

only those with four or more readings being selected. Thirteen of these showed variations in pressure of 50 mm. or more; and five, variations of from 40 to 45 mm. In twenty-three of this series, the maximum pressure was recorded on the patient's first examination. This can probably be accounted for by the emotional disturbance associated with the first visit to the physician. One patient at the first visit had a systolic pressure 50 mm. higher than at three subsequent examinations.

The high peaks following emotional upset give a clue in regard to one phase of treatment—the necessity of leading a life as free from tension and excitement as possible. To my mind, advice along these lines holds first place in the treatment of this disease. The business man with great responsibilities should be urged to unload some of them to other shoulders. He should be taught to relax, to acquire some recreational hobby. Anger should be curbed. His evenings should be spent quitely at home, not playing bridge or poker. Social gatherings with the excitement and attendant tension should be restricted.

Water Intake.—Many years ago, von Noorden warned against excessive fluid intake in hypertension on the basis of raising blood pressure. Mohr [7] reported that the maximum elimination of nitrogen occurred when the daily output of urine reached 1,500 cc., and fluid intake above this should be avoided. Foster and Davis [8] studied twenty-two patients with hypertension for the purpose of determining the effect of fluid intake on urea excretion. The urea excretion increased with the fluid output up to the 2,000 cc. point. Beyond this, the nitrogen excretion exceeded the intake. Miller and Williams were able to give patients with hypertension 1,000 cc. of water through a Rehfuss tube in an interval of fifteen minutes without increasing the blood pressure. Twenty-five hundred cubic centimeters given within an interval of one hour caused only slightly increased blood pressure. It is highly improbable that any quantity of water drunk by a patient will raise pressure. In the absence of edema, free water drinking may be encouraged.

Sodium Chloride.—There has been considerable discussion in recent years on the rôle of chlorides in hypertension. Allen [9] reported that chloride retention played a rôle in blood pressure. O'Hare and Walker,[10] McLester,[11] Mosenthal [6] and others failed to confirm Allen's findings. It is fair to assume from the evidence that there is no advantage in excessive restriction of chlorides. In fact, this may lead to impaired nutrition and may be actually harmful.

Diet.—There is a rather widespread impression that meat should be eliminated from the diet. This is due to the common belief that hypertension is associated with nephritis. As a rule, these patients do not show nitrogen retention. In such cases, there is no especial reason why meat should be entirely eliminated. True, adequate protein can be supplied without resorting to meat. In some instances, withdrawal of meat may be a real hardship and should not be given as routine treatment. There is abundant evidence that administration of protein up to at least 150 Gm. daily does not affect blood pressure. It is advisable that excessive protein be avoided, but the form in which it is administered is probably not important. The diet should be regulated to avoid obesity, as this means additional strain on a heart already overburdened.

Complete withdrawl of coffee or tobacco is unwarranted, and often serves to remind the patient of his disease. The patient's comfort and happiness should always be considered and unnecessary restriction avoided.

Bleeding and *Sweating.*—The effect of bleeding is very transitory. The actual lowering of pressure is not greater than that following a sweat. When taking blood pressure before and after bleeding, one should bear in mind that the excitement due to the prospective bleeding may raise the blood pressure much above its previous level. A reading taken at this time compared with one after bleeding may be misleading. In four patients with hypertension, by avoiding this psychic factor, I found the maximum reduction in blood pressure, after withdrawing 500 cc. of blood, only 15 mm.

Sweating temporarily lowers the blood pressure. Whether it actually is beneficial to the patient is questionable. It is a form of treatment frequently employed, and no valid objection can be urged against its use in moderation.

Drugs.—The use of drugs to lower hypertension has been largely discontinued. They do not reach the cause of the trouble and rarely add to the patient's comfort, and they are always transitory in their action. Radium water has been recommended as an agent capable of reducing blood pressure. If the literature is searched for real evidence, one's efforts are unrewarded. A few years ago, I followed the results of radium water on four patients with hypertension. It had no effect.

Diathermy.—This is one of the newer agents advocated in hypertension. As far as I have been able to determine, the literature does not contain any observation in which a prolonged study of the blood pressure preceding the treatment has been recorded. Cognizance has not been taken of the great variation in pressure in untreated patients. Until properly controlled observations have been made, the usual case reports cannot create any great enthusiasm.

We may consider the treatment of hypertension as one of many unsolved therapeutic problems. Under these circumstances, it is the duty of the physician to give advice and encouragement that may at least add to the patient's happiness, to avoid reminding him of this menace to his health, and to divert his mind from his disease by advising against the frequent taking of blood pressure, as such a procedure only reminds him of his trouble.

SUMMARY

The etiology of hypertension is undetermined. Until this is decided it is difficult or impossible to discuss, except in a very general manner, preventive measures. It has not been clearly determined how much can be accomplished in the treatment of hypertension. The extreme variation in blood pressure in an individual case demands careful control observation before conclusions are drawn on the value of any method of treatment.

122 South Michigan Avenue.

7. Mohr: Ztschr. f. klin. Med. **50**: 377, 1903.
8. Foster and Davis: Am. J. M. Sc. **151**: 49, 1915.
9. Allen, F. M.: Arterial Hypertension, J. A. M. A. **74**: 652 (March) 1920.
10. O'Hare, J. P., and Walker, W. T.: Salt in Vascular Hypertension, Arch. Int. Med. **32**: 283 (Aug.) 1923.
11. McLester, J. S.: Am. J. M. Sc. **163**: 794 (June) 1922.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MAJOR; ROBINSON; JAMES, LAUGHTON AND MACALLUM; BROWN, AND MILLER

DR. JOSEPH L. MILLER, Chicago: Is it not true that other organs besides the liver have a very marked effect on blood pressure? Several years ago Dr. S. A. Mathews and I worked on animals and we noted no difference between liver

extract and the extract of other organs. I should like to ask Dr. Major whether he sees in this liver extract any prospect more than a mere palliative treatment. I should like to ask Dr. Brown whether this method of treating Raynaud's disease is applicable to Raynaud's disease of the upper extremities. I was interested in his foreign therapy of these cases. Three or four years ago we had a patient with early thrombo-angiitis obliterans of one foot. We gave him injections of typhoid bacilli intravenously, and his trouble disappeared. I did not see that patient until some time ago. The one foot had remained well while the other foot was giving him trouble. Recently I saw a report of a case of thrombo-angiitis obliterans in which the surgeon had given intravenous injections of Ringer's solution. Following this the patient had a temperature of 103 F., and since then, which was a year or more ago, the patient had been feeling perfectly comfortable.

DR. J. N. HUNSBERGER, Norristown, Pa.: I used extract of liver in a case of cardiovascular disease with decompensation in which the patient, a man, aged 56, had a high blood pressure of some years' standing. I saw him first last summer when he was suffering from decompensation. He had a systolic blood pressure of about 270, with a diastolic pressure of about 170. This varied at different times. I kept him in bed for ten weeks. By that time he felt fairly comfortable, except that his blood pressure had not changed after that period of rest. I secured some liver extract through Dr. Karr at Philadelphia. The first injection was 10 cc. After an hour's time there was a drop from 245 systolic to 180, and a drop of the diastolic from 170 to 120. The patient seemed to feel very comfortable. The next day this pressure had gone back to within possibly 20 millimeters of the systolic and diastolic. At the end of three days I repeated the injection and we kept this up for about a month, at intervals of three days. As I said before, his heart was compensating well and he was very comfortable, but his blood pressure came back again. The kidneys were functioning very well. The phenolsulphonphthalein test was normal. However, there were occasional traces of albumin in the urine. The man's condition was very good for about four months, when he contracted grip. The decompensation came back and he died last week. I believe that the treatment with liver extract, when properly standardized, is of value. Any animal extract might cause the same drop, but this drop was so marked in the case reported and the feeling of well being that the patient had during the period of injections so good that this treatment is really worth considering. Dr. Miller brought up a very interesting point of blood pressure following dreams. Dr. McKenzie of the University of Pennsylvania reported cases of high blood pressure in athletes. After running a hard race an athlete would usually have his blood pressure run up to 200 or more. Of course, this pressure subsided after rest. That might explain why so many men, especially elderly ones, die rather quickly when they overexert themselves.

DR. E. C. THRASH, Atlanta, Ga.: Hypertension has two outstanding causes, either one or both of which may be acting. One of these causes is thickening and stiffening of the vessels from structural change; the other is vasomotor dyscrasia. The vasomotor disturbances causing hypertension are due to intoxications, and except those resulting from nephropathies these are usually classed as "essential hypertensions." This faulty metabolism may be produced by toxic absorption from the alimentary tract, imperfection in the end products of digestion, endocrine dysfunctions, and retention intoxications, the latter resulting chiefly from diseased kidneys. We sum this up as follows: Metabolism is preparing the food for the cells so that combustion can take place. If this terminal preparation is imperfect because of any of the foregoing causes, combustion is proportionately imperfect. The cells rebel against such food, which rebellion reacts on the vasomotor system, causing a contraction of the arterioles to prevent the influx of food (blood) which the cells are refusing to accept, such resistance producing hypertension. In other words, the cell asks for food and is handed a stone. Excessive food intake is probably the most general cause of this type of hypertension, because excess in food overtaxes the digestive system from the alimentary tract to the cell, and the food reaches the cell imperfectly prepared.

DR. J. H. PRATT, Boston: Dr. Major has cited a case of arterial hypertension in a physician in which severe headaches and dizziness disappeared after the administration of liver extract. What are his reasons for thinking that the headaches and dizziness were due to the hypertension? Is it not probable that they were of psychoneurotic origin and that their disappearance was due to the encouragement the patient received from knowing he was taking a new treatment that was full of promise?

DR. F. A. BRYAN, Dallas, Texas: I tell these high blood pressure patients not to eat any proteins. We need a very small amount of proteins in comparison with our need for carbohydrates.

DR. WALTER SHROPSHIRE, Yoakum, Texas: Dr. Miller cogently called our attention to the fact that we do not know why, and to find the why was necessary before we would be capable of successfully finding the remedies. It had been our observation before we had an instrument for recording blood pressure that men as they grow old, especially those who live sedentary or mental lives, gradually develop hardened arteries or arteriosclerosis. I believe the cause of that has been a faulty digestion. Food taken into the alimentary tract that is not properly digested undergoes fermentation and produces a certain poison which is carried throughout the arterial system and acts as a chemical poison along the artery wall and causes hardening. I believe that if we scrutinize it closely we shall find it a very probable condition in hypertension. The undigested food fermenting produces poison. It has a tendency to irritate the artery walls, to produce hardening of the walls of the arteries, and hence we have hypertension. With a perfectly soft and flexible arterial system we may have temporarily increased blood pressure, but not uniformly nor permanently. Under excitement we may have hypertension exceeding 30 or 40 mm. When that excitement has passed, the blood pressure falls without any remedy whatever. But those cases are not the ones we fear. We fear those cases when hypertension stays high, and I believe that if we look carefully to the digestive tract we shall find that the artery walls are hard and that blood pressure stands and remains high. I was glad to hear Dr. Miller say that the absence of meat in the diet was not necessary, because if a meal of meat is well digested, why should a person refrain from eating meat? We all prescribe milk because milk in fermentation does not produce the violent poison that the fresh meat does. Fresh meat taken in quantities, when there is no residue to ferment and produce poison, will do no harm.

DR. EMMET F. HORINE, Louisville, Ky.: I should like to have Dr. Robinson tell us what amount of time is required for making his test and completing the calculations. With reference to the prognosis in hypertensive heart disease mentioned by Dr. Miller, if one will study these cases by graphic methods, considerable information can be gained. Abnormal electrocardiographic tracings, particularly varying grades of auriculoventricular block, peak notching of the Q-R-S group, low voltage of this group, inversion of the T wave in all three leads or in leads I and II all alter the prognosis materially by showing that considerable change has taken place in the myocardium. When no such abnormalities are found, even though the systolic and diastolic pressures have been rather high, our prognoses are going to be definitely better. Further, observation by the sphygmograph will be of value because it has been found that when pulsus alternans is either constant or follows premature beats the prognosis is relatively bad. With reference to the height of the blood pressure and prognosis, systolic levels are of less value than the diastolic. When the diastolic level is constantly maintained quite high, the prognosis is definitely bad. When the diastolic is constantly maintained at 150 mm. of mercury or above this level, early death usually occurs. The higher the diastolic pressure, the more serious is the outlook; but I have records of patients with diastolic levels maintained at 120 and, when

they have followed directions, they have gone along for years in comfort. With reference to the treatment of hypertension, I would emphasize the fact that diet plays an important part. The diet should be regulated first for the reduction in weight, and, secondly, for the control of constipation, if present. Next, I insist on relaxation and on frequent vacations. Nervousness must be controlled. Bromides are of value, as is also phenobarbital, which not only controls nervousness but also has a tendency to lower blood pressure. Any possible focus of infection should be removed. Liver extract offers some definite hope in controlling unpleasant symptoms. I have used it for six months in selected cases that were not controlled by other methods of treatment. I can certainly bear out what Dr. Major said with reference to controlling certain symptoms. In certain cases there is a lowering of the blood calcium. Possibly the administration of calcium will be of some value. No longer do we feel that we should use any of the vasodilator group of drugs as a routine. They are used merely for emergency purposes.

DR. WILBUR A. BAKER, Kansas City, Mo.: I have had about nine cases of hypertension in which I have used liver extract. In one case the results were very striking.

DR. I. I. LEMANN, New Orleans: I have had a small group of hypertension cases treated with liver extract for periods of about six weeks. These cases, seven in all, were in women at about the time of the menopause, in whom no evidence of organic kidney trouble was discovered. There were no changes in the urine. The blood on chemical examination was normal, and other functional tests proved normal. There were no changes in the eyegrounds. These cases had been observed over a long period of years during which many observations of the blood pressure had been made. In none of these women were we able to find any persistent or even marked transitory reduction of the blood pressure. In one there was complete relief from the symptoms of pounding in the head, precordial throbbing and headache.

DR. G. CANBY ROBINSON, Nashville, Tenn.: The question has been asked regarding the length of time it takes to do cardiac output determinations on the basis of the method I described. It is a very time consuming and rather laborious operation. It does not put a particular strain on the subject, but many gas analyses and blood analyses have to be done. I feel that we shall not gather many facts of value from the point of the study of diseases until we have some simpler method than the one I have described. There are some simpler methods and we are now interested in testing out their accuracy and comparing them with the one described, which we believe is an accurate and standard method. In regard to the study of patients with arterial hypertension, I would emphasize the value of the examination of the arteries directly by means of the ophthalmoscope. I feel that the physician can gain a great deal by the examination of the eyegrounds, even if he only studies the condition of the arteries and the pressure on the veins. In studying arterial disease, this method ought to be employed as a routine.

DR. A. A. JAMES, London, Ont.: In regard to the question by Dr. Miller with respect to other extracts, certainly organ extracts on the whole cause a reduction in blood pressure. There are some that raise the blood pressure. For example, an extract from the kidneys and spleen usually will give a rise. But, using other extracts, we have observed so far no evidence of a prolonged fall as we have with the liver extract. We can get the short fall with other extracts but not the sustained fall. With the liver extract there is a very sustained fall. As Dr. Major expressed it, there is a gradual fall. Then there was a question raised regarding the selection of cases. It is important that they should be carefully selected. We are making an attempt to pick out cases of the true malignant type of hypertension, with no demonstrable or apparent cause for the hypertension. That is, with the kidneys apparently normal, no eyeground change, no foci of infection demonstrable, yet these patients have a high blood pressure. The patients are put to bed for two weeks and their blood pressure taken several times a day, after and before meals, etc. The effect of the rest in bed is carefully checked, as are also the effects of diet, hot baths, phenobarbital and nitrites which are given. After all the usual remedial measures have been employed, it is found that the reduction in blood pressure is very slight. We can get a quite pronounced effect from the use of the liver extract in these cases, and up to the present our results have been encouraging.

DR. RALPH H. MAJOR, Kansas City, Kan.: I think the experimental work of Drs. James, Laughton and Macallum and of myself has shown rather clearly that there is a depressor substance in the liver extract which does not correspond to previous depressor substances described. I would agree with Dr. James in answering Dr. Miller's question. A great many organs have depressor substances in them, but I do not believe that evidence will show that these depressor substances have anything more than a temporary effect. The laboratory side of this problem is convincing and conclusive. The clinical side is, of course, much less so. We have studied both the immediate falls in patients and the more lasting falls. By immediate falls I mean falls lasting over a period of hours. Some patients, under properly controlled conditions, for example, a rest in bed as long as a week to ten days, have shown a marked and prolonged fall in pressure following a single injection. Certain other patients, I might say, have shown absolutely no response. This does not, however, prove that we are not dealing with a depressor substance. Dr. Miller showed more than twenty years ago that many hypertensive patients showed no immediate fall with nitrites, and many showed an actual rise. The patients in whom we have seen the best results have been rather young, with no evidence of peripheral arteriosclerosis, whose kidneys were normal, whose urine showed no casts, and whose eyegrounds showed no marked changes. I think that in many of our patients the relief of symptoms is entirely psychic. On the other hand, patients who wake up during the night because of headaches, and patients who state that they are afraid to go down the street because their friends will think they are drunk, have had a disappearance of such symptoms. It is rather difficult to explain such relief from symptoms on a purely psychic basis. I have tried to emphasize that this work is entirely in the experimental stage. We have had a great many disappointing results, but, on the other hand, we have had quite a series of rather suggestive results, and the one thing that has encouraged us particularly has been the fact that a great number of patients have been relieved of disagreeable symptoms. I agree fully with what Dr. Miller said. We have had patients obtain relief without doing anything in particular for them. I believe that the psychic knowledge that something was being done for them was sufficient cause for their feeling of well being.

DR. GEORGE E. BROWN, Rochester, Minn.: Dr. Miller asks whether we have made application of surgical measures in the treatment of Raynaud's disease of the upper extremities. Dr. Adson has removed the left cervical sympathetic ganglions in one patient with Raynaud's disease involving the hands. There was vascular dilatation of the corresponding hand, but not to the degree that has been observed in the lower extremities following the lumbar operation. Further trial is being considered by Dr. Adson. As I stated before, we have been feeling our way, so to speak, in trying to select the proper type of case that will be improved by removal of the vasoconstrictor fibers. I agree thoroughly with what Dr. Miller said about the intravenous injection of foreign proteins. The patients obtaining vasodilatation with the fever induced by the injection of foreign protein had definite vasodilatation following lumbar ganglionectomy. I have frequently observed patients with Buerger's disease, quite similar to the ones described by Dr. Miller, who were given injections of foreign protein with moderately severe reactions, who had marked pain relief and left the hospital apparently compensated. I was much interested in the discussion of the treatment of hypertension. I think that Dr. Miller has correctly stated the present status of this question. There is perhaps one future line of therapy that may shed a gleam of light on this puzzling question; that is, if we can devise an operation that will loosen up a sufficient portion of the

vascular system so as to produce a constant lowering of the blood pressure. Dr. Rowntree and Dr. Adson reported a case of malignant hypertension in which lumbar ganglionectomy was performed. This case was followed very carefully for a period of over a year, and the subsequent blood pressure readings showed a lower level averaging about 25 per cent. The clinical improvement was striking. But, this may be another instance of the psychic effects of operation.

HYPERGLYCEMIA WITHOUT GLYCOSURIA IN ONE THOUSAND DIABETIC PATIENTS *

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The present day ideal in the treatment of diabetes mellitus is to supply the patient with a diet sufficient for his particular requirements, and with blood and urine free from sugar and ketone bodies. Thanks to insulin, it is now possible to attain this ideal in the great majority of cases; but every one who treats a fair number of diabetic patients now and again encounters instances in which, while it is possible to keep the urine sugar free, the blood sugar remains at a higher level than is generally considered satisfactory.

Recently, there have been reported cases that are definitely refractory to insulin. Falta [1] had such a patient, who later consulted Basch,[2] and was found by the latter to be impossible of control on the usual diets with insulin, but was easily managed on Petrén's low protein and high fat diet without insulin. Umber and Rosenberg [3] also point out certain types of glycosuria which are insulin refractory. The majority of their patients have renal glycosuria, but some have true diabetes. Berghoff [4] describes what he considers to be "a practical danger in the use of insulin by the patient at home," because he noticed often that patients who were discharged from the hospital with a normal blood sugar and taking insulin reported later showing a definite elevation in the renal threshold for glucose. His observations are well shown in characteristic case records. Still more recently, Major and Davis [5] have recorded several cases of severe but uncomplicated diabetes in young patients under treatment with insulin, who showed very high blood sugars without glycosuria. Berghoff, as well as Major and Davis, hints that the observed hyperglycemia without glycosuria is likely an insulin effect.

Similar cases of hyperglycemia without glycosuria in our own experience have stimulated an interest in the question. In an effort to ascertain the possible explanation of this phenomenon, 1,000 consecutive diabetic case histories were studied. The first 500 of these patients were observed before insulin became available, while the second 500 all received insulin. In both groups, all cases which showed a blood sugar above 0.18 per cent, with a sugar free twenty-four hour urine for at least three consecutive days, were selected for further study.

The important facts in regard to the patients selected from the 500 not taking insulin are shown in the accompanying table (A). It will be seen that of the 500 patients examined thirteen, or 2.6 per cent, were definitely hyperglycemic, but showed no sugar in the urine. Eight were females and five were males. The blood sugar values are in all instances the lowest recorded for that patient, and all are fasting blood sugars. In this group of thirteen cases, the average age at onset of diabetes was 44.2 years, with the extremes varying between 13 and 71 years. The average duration of the diabetes at the time of observation was three and four-tenths years, with nine months and nine years as the extremes. The average fasting blood sugar was 0.22 per cent. An average of 20 per cent above normal in weight prior to the onset of diabetes was present in these cases. The highest systolic blood pressure was 200 millimeters of mercury, the lowest, 96, while the diastolic pressures ranged from 115 down to 70. The average blood pressure was 144 systolic, 85 diastolic. All of these cases were severe except three, which were moderately severe. Eight of the thirteen, 62 per cent, showed arteriosclerosis or hypertension or both. One patient was quite obese. No complications were found in the remaining four, who were all young people with severe diabetes.

Among the second 500 diabetic patients who were treated with insulin there were 23, or 4.6 per cent, with hyperglycemia, but no glycosuria, as shown in the accompanying table (B). The female sex was again preponderant, twenty of these patients being females, and only three males. The average age at onset in this group was 48 years, with extremes of 16 and 68 years. The average duration of the disease at the time of observation was eight and four-tenths years, the extremes being two-tenths and seventeen years. As in the preceding group, the fasting blood sugar averaged 0.22 per cent. The average insulin dose was 18 units daily, the smallest dose being 10 units, and the largest 32 units. The average of 21 per cent above normal in weight before the onset of diabetes was present in this group. Systolic blood pressures ranged between 265 and 92, the diastolic between 120 and 54, with averages of 156 systolic and 85 diastolic. Nine of these cases were severe; twelve were moderately severe, and two showed mild diabetes. Fifteen, or 65 per cent, showed ateriosclerosis, hypertension, angina pectoris, gangrene, or other evidence of cardiovascular disease. Mitral stenosis, a large abscess of the thigh, recent coma, tabes mesentericum, and a monoplegia involving the left arm, probably due to an overdose of insulin, were each encountered once. In three cases no complications were found, and again, as occurred in the uncomplicated cases in which insulin was not given, all of these were young persons with severe diabetes.

During the study of these patients, the impression grew that those which are described above as having hyperglycemia without glycosuria closely resembled another group of patients studied at necropsy and recently reported from this clinic by Warren and Root.[6] These writers examined the records of twenty-six cases of diabetes coming to necropsy, and found that thirteen showed hyalinization of the islands of Langerhans. One of these patients was under 45 years of age, and the exception was a patient, aged 24, with severe diabetes, who died of inanition after two years of dia-

* From the diabetic clinic of Dr. E. P. Joslin in the New England Deaconess Hospital, Boston, and the Department of Internal Medicine, University of Texas Department of Medicine, Galveston, Texas.

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Comparison of Findings in One Thousand Diabetic Patients (Five Hundred Insulin Treated and Five Hundred Noninsulin Treated)

Case	Sex*	Age at Onset	Duration in Years at Time of Observation	Fasting Blood Sugar, per Cent	Insulin Daily Dose Units	Severity	Prognosis	Complications	Maximum Weight, Pounds	Weight per Cent of Normal	Blood Pressure: Systolic	Blood Pressure: Diastolic	Cause of Death
A. Patients not Taking Insulin													
1	♀	48	2	0.20	..	Mod. severe	Fair	Hypertension	216	+46	190	115	Living
2	♂	12	3	0.21	..	Severe	Fair	None	100	—17	114	84	Living
3	♀	56	5	0.23	..	Mod. severe	Fair	Hypertension; cardiac hypertrophy	210	+48	172	90	Living
4	♀	71	1	0.21	..	Mod. severe	Fair	Hypertension; gallstones	194	+31	170	85	Living
5	♀	52	9	0.20	..	Severe	Fair	Hypertension; arteriosclerosis	221	?	190	105	Living
6	♀	54	7	0.20	..	Severe	Bad	Hypertension; arteriosclerosis; trifacial neuralgia	190	+39	200	90	Living
7	♀	38	3	0.24	..	Severe	Fair	Obesity	195	?	120	80	Living
8	♂	55	0.8	0.20	..	Severe	Bad	Arteriosclerosis; pancreatitis acute?	160	?	105	70	Living
9	♀	35	3	0.20	..	Severe	Fair	None	146	Normal	102	60	Living
10	♂	46	3	0.21	..	Severe	Fair	Arteriosclerosis; syphilis	170	+10	154	70	Living
11	♂	22	2	0.20	..	Severe	Fair	None	138	?	118	75	Living
12	♂	62	2	0.20	..	Severe	Fair	Arteriosclerosis	180	+22	145	90	Living
13	♂	22	4	0.24	..	Severe	Fair	None	140	Normal	96	70	Living
Averages		44.2	3.4	0.22					173	+20	144	85	
B. Patients Taking Insulin													
14	♀	49	17	0.22	20	Mod. severe	Bad	Hypertension; arteriosclerosis	185	+29	202	50	Living
15	♂	21	7	0.20	25	Severe	Fair	None	150	+ 8	116	80	Living
16	♀	74	3	0.23	15	Mod. severe	Bad	Arteriosclerosis; hypertension; ulcer of foot	130	?	180	100	Living
17	♀	50	10	0.21	15	Severe	Fair	Gangrene of foot; amputation	250	?	140	70	Living
18	♀	64	10	0.20	5	Mild	Bad	Gangrene of foot; hypertension; arteriosclerosis	180	+31	210	94	Living
19	♀	62	1	0.22	10	Mod. severe	Bad	Angina pectoris, hypertension; arteriosclerosis	170	+28	102	90	Living
20	♂	29	7	0.21	30	Severe	Fair	Mitral stenosis	200	+ 9	123	70	Living
21	♀	68	0.2	0.21	15	Mod. severe	Fair	Arteriosclerosis; hypertension; cataract	180	Normal	160	80	Living
22	♀	16	1	0.22	25	Severe	Fair	Abscess of thigh, 12 by 12 cm.	124	Normal	102	70	Living
23	♀	63	1	0.22	10	Mod. severe	Fair	Hypertension	179	+39	170	98	Living
24	♀	66	1	0.19	33	Severe	Fair	Recent coma	164	+15	182	54	Living
25	♀	64	0.3	0.22	11	Severe	Fair	Hypertension; paronychia	130	?	160	80	Living
26	♀	52	1	0.20	23	Mod. severe	Fair	Arteriosclerosis; peripheral neuritis	138	Normal	142	80	Living
27	♀	49	2	0.27	15	Mod. severe	Fair	Hypertension	200	?	194	70	Living
28	♀	48	14	0.19	10	Mod. severe	Bad	Angina pectoris; gallstones; chronic nephritis; popliteal occlusion	200	?	205	120	Living
29	♀	36	4	0.24	30	Severe	Fair	None	130	Normal	112	80	Living
30	♀	39	10	0.21	25	Severe	Fair	Hypertension; carbuncle; suppurative otitis media	170	+29	164	98	Living
31	♀	28	7	0.21	32	Severe	Fair	None	112	Normal	108	70	Living
32	♀	51	4	0.21	5	Mild	Fair	Hypertension; ulcers of feet	200	+105	220	120	Living
33	♂	34	4	0.19	25	Mod. severe	Fair	Tabes mesenterica; syphilis ?	185	?	130	90	Living
34	♀	38	5	0.23	20	Mod. severe	Fair	Paralysis of left arm (insulin overdose)	129	?	112	80	Living
35	♀	66	1	0.22	15	Mod. severe	Bad	Arteriosclerosis; hemiplegia	150	+ 6	160	80	Living
36	♀	47	3	0.24	10	Mod. severe	Fair	Arteriosclerosis; gangrene of foot	175	+29	168	96	Living
Averages		48	5.4	0.22	19				172	+21	156	85	
C. Cases Showing Hyalinization of Islands of Langerhans at Necropsy													
37	♀	34	14	0.19	10	Mod. severe	....	Arteriosclerosis; chronic nephritis	185	+33	130	90	Cardiorenal disease
38	♂	62	14	0.18†	6	Severe	....	Arteriosclerosis; angina pectoris	270	+29	160	82	Angina pectoris
39	♂	35	17	0.12	0	Mod. severe	....	Arteriosclerosis; gallstones	170	+16	145	90	Postoperative peritonitis
40	♀	49	10	0.13	90	Severe	....	Arteriosclerosis; carcinoma of pancreas	224	+45	?	?	Carcinoma of pancreas
41	♀	39	14	0.18	0	Mild	....	Arteriosclerosis; gangrenous appendix	210	?	140	80	Appendicitis, gangrenous
42	♂	22	1.8	0.18	0	Severe	....	None	154	+ 8	108	80	Inanition
43‡	♂	23	30	0.27†	0	Mod. severe	....	Arteriosclerosis; gangrene	224	+54	145	90	Uremia
44	♂	53	0.3	0.19	0	Mod. severe	....	Arteriosclerosis	195	+17	140	95	Duodenal ulcers
45	♀	52	3	0.15§	10	Mod. severe	....	Arteriosclerosis; bronchopneumonia	170	+21	180	90	Bronchopneumonia; purulent pericarditis
46	♀	63	1	0.20	0	Mod. severe	....	Arteriosclerosis; gangrene	148	+11	172	78	Angina pectoris
47	♂	27	25	0.32†	12	Mod. severe	....	Arteriosclerosis; septicemia	252	+66	160	90	Septicemia (streptococcus hemolyticus)
48	♀	63	0.4	0.27	35	Severe	....	Arteriosclerosis; abscesses	220	+37	226	90	Multiple abscesses
49	♂	61	3	0.31†	15	Mod. severe	....	Arteriosclerosis; septicemia	225	+36	170	90	Septicemia (staphylococcus)
Averages		44.3	10.5	0.18¶	25¶				204	+31	157	87	
D. Cases Without Hyalinization of Islands of Langerhans at Necropsy													
50	♀	37	25	0.19	14	Mod. severe	....	Arteriosclerosis; gangrene	210	+41	165	80	Angina pectoris
51	♂	10.5	0.1	0.07	0	Severe	....	Coma	75	+12	100	60	Coma
52	♂	13.5	0.2	0.09	0	Severe	....	Coma	105	+15	120	70	Coma
53	♂	35.9	0.1	0.10	5	Severe	....	Lobar pneumonia	135	+17	120	75	Lobar pneumonia
54	♂	32	2.5	0.23†	0	Mod. severe	....	Liver abscess	230	+38	120	70	Multiple abscess of liver
55	♂	60	9	0.17	0	Mod. severe	....	Arteriosclerosis; gangrene	228	+38	180	100	Cardiac failure
56	♂	18	1	0.30†	0	Severe	....	Paranephric abscess	145	Normal	115	75	Paranephric abscess
57	♂	41	17	0.26†	0	Mod. severe	....	Pulmonary tuberculosis	210	+25	142	82	Pulmonary tuberculosis
58	♀	15.4	0.6	?	60	Severe	....	Coma	115	?	?	?	Coma
59	♂	61	0.1	0.14	7	Mod. severe	....	Septicemia (streptococcus)	260	+41	230	110	Septicemia
60	♂	38	9	0.14	25	Severe	....	Appendicitis, acute; syphilis	175	?	125	70	General peritonitis
61	♂	53	11	0.16	20	Mod. severe	....	Arteriosclerosis; gangrene; septicemia	220	+57	144	62	Septicemia (streptococcus hemolyticus)
62	♀	29.4	0.1	0.11	25	Severe	....	Exophthalmic goiter; septicemia	200	+46	100	0	Septicemia
Averages		33.9	5.8	0.13‡	27¶				181	+33	137	71	

* In this column, ♂ indicates male; ♀, female.
‡ Restricted necropsy.
† Urine never sugar-free while under observation.
§ One-half hour after 5 units of insulin.
# Only those cases with sugar-free urine included in averages.
¶ Average of cases given insulin only.

betes in the preinsulin days. This particular case showed no complications. The remaining twelve cases with hyaline changes in the islands at necropsy presented varying degrees of arteriosclerosis and cardiac complications. In order to demonstrate how closely these thirteen cases resemble the clinical cases with hyperglycemia without glycosuria, section C of the accompanying table was prepared from the clinical and necropsy records of the former group. A study of the data discloses the following important points: 1. Six patients were males and seven were females. 2. The average age at the onset of diabetes was 44.3 years. 3. The duration at the time the observations were made was ten and three-tenths years. 4. The average fasting blood sugar without glycosuria was 0.18 per cent. It was not possible to secure complete data on this point in four cases, because the patients were seen only a short time before death, and did not have a sugar free urine while under observation. Patient 45 was sugar free only once, and then temporarily after 15 units of insulin. The blood sugar figures from these five cases are not included in the average. However, the tendency to hyperglycemia without sugar in the urine was a distinct feature in this series of cases. 5. Arteriosclerosis was demonstrated in twelve cases, one in a young person with a severe uncomplicated diabetes. 6. The percentage of weight abnormality averaged plus 31 per cent. 7. The average systolic blood pressure was 157; diastolic, 87, the systolic extremes being from 236 to 108, and the diastolic, from 90 to 78.

The thirteen patients in Warren and Root's series who showed no hyalin in the islands are tabulated for comparison in the accompanying table (D). Referring to this group we find that: 1. Three were females and ten were males. 2. The average age at onset was 33.9 years. 3. The average duration at the time of observation was 5.8 years. 4. The blood sugar averaged 0.13 per cent. Three patients in this group were never sugar free while under observation; hence, the figures from those were not included in the average. 5. Arteriosclerosis was found in only three of these cases, and in these three the highest blood sugars for the group were observed; namely, 0.19, 0.17 and 0.16 per cent. In the remaining ten cases the chief complications were coma in three cases, septicemia in two cases and lobar pneumonia, liver abscess, paranephric abscess, pulmonary tuberculosis, and general peritonitis each in one case. 6. The weight in this series averaged plus 33 per cent above normal. 7. The average systolic blood pressure was 137; diastolic, 71, the systolic extremes ranging from 220 to 100, and the diastolic from 110 to 0.

It appears, therefore, that the cases which have been studied at necropsy, and show hyalinization of the islands of Langerhans, are very similar to the cases that were found clinically to present high blood sugars without showing sugar in the urine. This similarity was not present in another group without hyalinized islands. One familiar with the lack of uniformity in the pathologic picture of the pancreas in diabetes would naturally be somewhat reluctant to ascribe a particular clinical finding to a certain type of island as found at necropsy. However, the resemblance between the clinical cases of diabetes with hyperglycemia, but without glycosuria, and the cases which have been described as showing hyalin in the islands at necropsy is so striking it is difficult not to believe that there is some connection between this pathologic change and those cases which are distinguished by this clinical complex. It is not easy to explain either the exact nature or significance of hyaline changes in the islet tissues of the pancreas, but apparently it is a common change in those who have had diabetes over a number of years and in severe diabetic youthful patients, in whom the disease has run a very much more rapid course. Hyalinization would appear, therefore, to be in the nature of a late or terminal pathologic change, which is clinically seen associated with hyperglycemia without glycosuria.

Granting the accuracy of this deduction, it is still difficult to explain the exact mechanism in the production of the changes that cause an elevation in the renal threshold for sugar. In the manifestly arteriosclerotic patient, it seems justifiable to conclude that the resulting renal injury is sufficient to account for the elevation in the sugar threshold. In some severe cases in young people, however, identical clinical findings may be obtained in the absence of lesions of the blood vessels or kidneys demonstrable by the methods employed. It does not seem reasonable that insulin per se is responsible for the alteration in renal permeability. It is true that in the series of patients not taking insulin there were 2.6 per cent, as against 4.6 per cent in the insulin treated group who showed hyperglycemia without glycosuria. This, however, seems rather to come about from the fact that many of the patients in the insulin treated series could not have been kept aglycosuric without insulin, and hence would not have come up for consideration in the noninsulin treated group. It is conceivable, in severe diabetes in young patients, who have progressed to the stage of hyaline degeneration in the islands, that there may be a compensatory elevation of the kidney threshold for glucose; but such cannot be positively shown until more is known concerning the factors involved in the maintenance of normal renal threshold values.

CONCLUSION

It appears justifiable from the material at hand to associate elevation of the renal threshold for glucose with hyalinization in Langerhans' islands in uncomplicated diabetes. When we have such a conception of the underlying cause of hyperglycemia without glycosuria, and regard hyaline changes as a late event in the course of the disease, such clinical findings sustained over a long period of time would appear to have a definitely unfavorable prognostic importance. This is in addition, of course, to the constantly increased likelihood of infections in those with hyperglycemia with or without glycosuria.

5 Peterborough Street.

Influence of Universities on Advancement of Public Health.—While the necessity for the training of the higher, professional or expert administrators is now unchallenged, the equal necessity with regard to the training of the rank and file of the sanitary army is not yet so fully recognized. Knowledge which is the possession of a few can only benefit a few. Just as in the monastic days of the older universities the value of the trained itinerant preachers was recognized, so today the universities, or some of them, recognize the vital importance of the training of those officers who are in daily touch with the people, and whose business it is to translate and apply established facts. Among this class are sanitary inspectors and health visitors, the staffs engaged in the inspection of meat and foodstuffs, or in the suppression of smoke and the proper control of boiler furnaces, and so forth. It is in connection with the university schools of social science, or public health, that this training is provided, and the certification of the candidate follows, as in the case of the diploma of the health officer.—Hope, E. W.: *Proc. Roy. Soc. Med.* **19**:29 (March) 1926.

EFFECT OF INJECTIONS OF DEXTROSE AND OF INSULIN AND DEXTROSE ON BLOOD SUGAR

PRELIMINARY REPORT *

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FORRESTER RAINE, M.D.
MARGARET C. PERRY, A.M.
AND
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For several years we have been interested in the therapeutic administration of dextrose solutions intravenously, both with and without insulin, to patients with nondiabetic acidosis and excessive vomiting of pregnancy. The results that have followed this treatment have been published elsewhere.[1] Seriously sick patients of these types are relatively uncommon, and it will be some time before a number sufficient to report

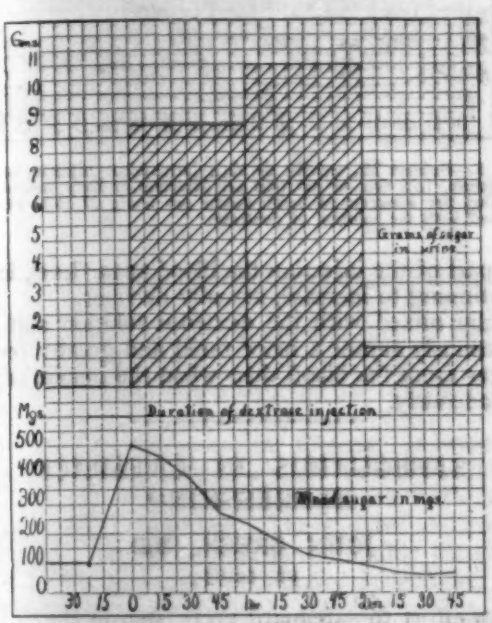

Chart 1.—Subject P., weight 63.5 Kg.; intravenous injection of 25 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight given in eighteen minutes.

can be studied carefully in the manner outlined below. In the meantime, in order to learn more of the mechanism causing these results, it seemed essential to study the effects which these therapeutic procedures have on normal individuals. Two observations, in the course of our work with normal subjects, seem of sufficient interest to report at this time.

Dextrose, 1.75 Gm. per kilogram of body weight, in 10 and 25 per cent solutions was injected intravenously into healthy young men. The 25 per cent solution was given in approximately twenty minutes, and the 10 per cent solution at the rate of 0.9 Gm. of dextrose per kilogram of body weight per hour, practically two hours. Blood sugar determinations (Folin-Wu method) were made before and every fifteen minutes after the injection was started. The sugar excreted in the urine was determined (Folin-Berglund method), in some instances on specimens collected by catheter every fifteen minutes, and in others on specimens voided two, three, four and five hours after the injection was started.

Sometimes the subjects were given insulin,[2] the dose being one unit to 3 Gm. of dextrose in every instance. The manner of giving the insulin varied. It was given hypodermically in a single dose one-half hour before

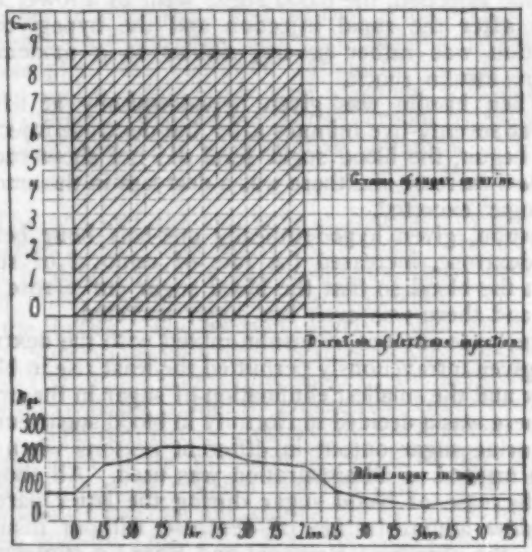

Chart 2.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour.

the administration of dextrose, or in divided doses, fifteen and seventy-five minutes after the beginning of the dextrose injection. Insulin was also given intravenously mixed with the dextrose solution.

The accompanying charts show the blood sugar curves and the amount of sugar excreted. Only one set

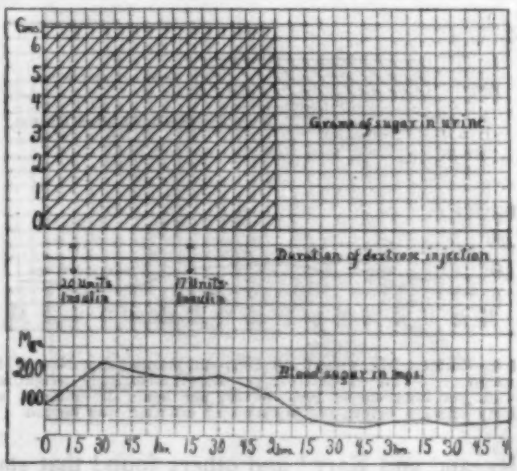

Chart 3.—Subject M., weighe, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour; 20 units of insulin given fifteen minutes and 17 units seventy-five minutes after injection of dextrose was begun.

is presented, since similar results from the respective procedures were obtained with all four subjects.

The rapid injection of a 25 per cent solution (which contained the same amount of dextrose as given in 10 per cent solution) produced a very marked hypergly-

* From the Laboratories of Columbia Hospital.

1. Thalhimer, William: Insulin in the Treatment of the Toxemic Vomiting of Pregnancy, J. A. M. A. 82: 696 (March 1) 1924; Surg., Gynec. & Obst. 39: 237 (Aug.) 1924; Insulin Treatment of Postoperative (Nondiabetic) Acidosis, J. A. M. A. 81: 383 (Aug. 4) 1923; Am. J. Obst. & Gynec. 9: 673 (May) 1925.

2. The insulin used in this investigation was furnished free by Eli Lilly & Co.

cemia followed by a mild hypoglycemia. There was considerable loss of dextrose in the urine.

The slow uniform injection of a 10 per cent solution caused a gradual rise in the blood sugar level during the first hour; but, although the injection continued at the same rate, during the second hour the blood sugar level instead of continuing to increase, as might be expected, showed a gradual decline. Following the injection, the blood sugar went to a lower level than after the rapid injection and the hypoglycemic reaction was rather severe, similar to a moderately severe insulin shock.

When insulin was given hypodermically at fifteen and at seventy-five minutes after the dextrose injection was begun, the blood sugar level did not show such a marked increase and there was a decrease in the amount of sugar excreted.

Insulin, given hypodermically one-half hour before the dextrose, increased the rate of removal of sugar from the blood so that the blood sugar curve rose still less and there was even less sugar excreted.

The same amount of insulin mixed with the dextrose and given intravenously permitted the least rise in blood sugar and the smallest elimination of sugar in the urine.

There was a decided uniformity in blood sugar curves and urine sugar output in different persons when the same method of administration was used. All showed the decrease of blood sugar during the latter part of the slow administration of dextrose without insulin; to use the phrase of Reinhold and Karr,[3] a stimulation of "the mechanism removing sugar from the blood." This is in reality an overstimulation because, when the injection is ended, a decided hypoglycemia results.

It has been known for years that a dextrose test meal caused a reacting hypoglycemia; Hamman and Hirschman[4] and others have shown that a second ingestion of dextrose, as the blood sugar rose to normal, produced little if any increase in the blood sugar level. On the other hand, Southwood,[5] Sevringhaus,[6]

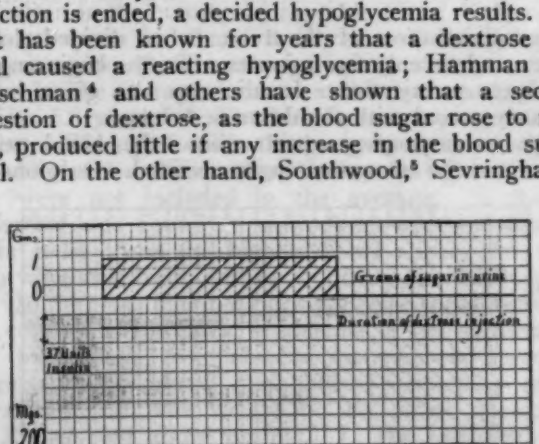

Chart 4.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour; 37 units of insulin given thirty minutes before the injection of dextrose was begun.

du Vigneaud and Karr[7] and others found that starvation, or a carbohydrate free diet, decreased the ability of the individual to utilize dextrose as shown by the tolerance test meal. Sevringhaus also found that experimental ketosis, induced by starvation, especially inhibited the "mechanism removing sugar from the blood."

We have not determined whether the slow injection of dextrose stimulates oxidation or storage, nor do we know whether the increased rate of removal of dextrose from the blood is caused by an increased output of insulin. These questions remain for further investigation.

3. Reinhold, J. G., and Karr, W. G.: Utilization of Carbohydrates, abstr. Am. J. M. Sc. **171**: 467, 1926.
4. Hamman, L., and Hirschman, L. I.: Bull. Johns Hopkins Hosp. **30**: 306, 1919.
5. Southwood, A. R.: Some Effects of Carbohydrate Deprivation on Pancreatic Function, M. J. Australia **2**: 460 (Nov. 3) 1923.
6. Sevringhaus, E. L.: The Effect of Fasting on Carbohydrate Utilization, abstr. J. Biol. Chem. **68**: xlviii, 1925; The Pancreatic Response to Carbohydrate Ingestion, Science **61**: 92, 1925; The Effect of Ketosis on Insulin Action in the Rabbit, abstr. J. Biol. Chem. **67**: xliii, 1926.
7. Du Vigneaud, Vincent; and Karr, W. G.: Carbohydrate Utilization: Rate of Disappearance of *d*-Glucose from the Blood, J. Biol. Chem. **68**: 281 (Nov.) 1925.

SUMMARY

The intravenous injection of 10 per cent dextrose at a slow rate into normal persons induces a more rapid removal of sugar from the blood, so that during the latter part of the injection the blood sugar level, instead of continuing to increase, actually declines.

Insulin mixed with the dextrose solution and given intravenously causes a more rapid and greater removal of sugar from the blood than when the insulin is given subcutaneously.

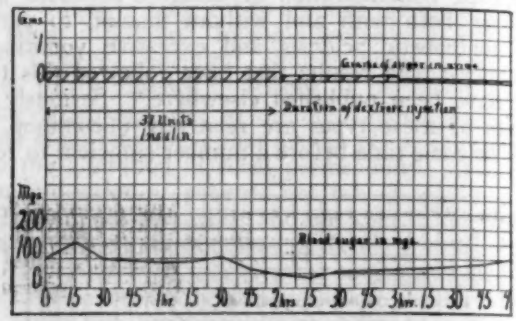

Chart 5.—Subject M., weight, 64 Kg.; intravenous injection of 10 per cent dextrose, 1.75 Gm. of dextrose per kilogram of body weight at rate of 0.9 Gm. per kilogram of body weight per hour; 37 units of insulin was mixed with the solution of dextrose.

SAFEGUARDS IN CATARACT EXPRESSION *

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ST. LOUIS

In an effort to safeguard every step in the "expression" [1] of cataract after capsulotomy, the routine here described has been developed. This paper deals solely with certain points in operative technic; hence the general preoperative preparation of the patient will not be discussed.

LOCAL PREPARATION

A culture is made in every case. If the conjunctival sac is clinically clean and there is no evidence of dacryocystitis, little attention is paid to the bacteriologic report. Atropine, 2 per cent, is instilled one hour and also one-half hour before operation. The lids, lashes and ocular adnexa are thoroughly scrubbed with liquid soap. The eye is then flooded with from 10 to 15 drops of a 4 per cent solution of strong silver protein, which is allowed to remain in contact with the conjunctiva for five minutes. A stream of a tepid solution of boric acid (2 per cent) rather forcibly washes out the silver protein solution, together with any conjunctival detritus. The palpebral margins and caruncle are wiped with conical swabs.

* Read before the Section on Ophthalmology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. This term, suggested by Gifford (Am. J. Ophth. **7**: 487 [June] 1924) to denote removal of the lens by pressure, seems very apt and, in my opinion, deserves wide acceptance.

PRELIMINARY IRIDECTOMY

The performance of iridectomy several weeks prior to the expression has generally been regarded as an important safeguard. It is, I believe, almost universally practiced in the case of one-eyed persons and, to a somewhat less extent, in cataract occurring in those with a high degree of myopia, in complicated cataracts, or when there is reason to believe that the vitreous is

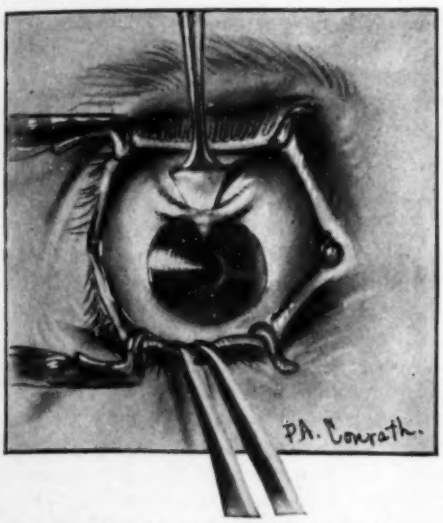

Fig. 1.—Subconjunctival incision with keratome.

fluid. At least one distinguished colleague has stated that if he himself were to be operated on for cataract he would insist that the operation be done in two stages. I imagine that his feeling is shared by many.

If surgeons are convinced of the preeminent value of this procedure, why is it not more generally practiced? The answer is not far to seek. It involves two hospital periods; there is a slight added risk of infection; patients living at a distance are loath to make two journeys to the city. These, after all, are trivial objections. If the surgeon is thoroughly convinced of the supreme value of preliminary iridectomy, he will be able to persuade fully 90 per cent of his cataract patients to submit to the two-stage operation. His arguments will be all the more convincing if he can assure the patient that the fee will be no higher. One of my colleagues, who shares my views, has stated that he would rather make a lower fee for a two-stage operation, so thoroughly is he convinced that the latter is for the best interest of the patient.

What, precisely, are the advantages of preliminary iridectomy? In the first place, it is probably the safest intra-ocular operation we are called on to perform. In my own experience I cannot recall a single case in which any serious consequences have occurred. I have on two occasions clumsily injured the lens with the point of the keratome with subsequent swelling and lens protein reaction, necessitating extraction within two weeks. The danger of infection is almost nil.

One cannot foretell how a patient is going to behave in a cataract operation: the apparently docile sometimes lose all control, and, *per contra,* the overwrought and excitable may prove perfectly tractable. At the time of the iridectomy one gains an excellent idea of the probable behavior of the patient at the expression and will be governed accordingly. Moreover, an iridectomy can be performed on the "bad actor" with the certainty that the patient's misbehavior will not prevent the execution of a finished technic nor in any way imperil the success of the operation. The psychic effect is a valuable asset. Having passed painlessly through the first ordeal and been assured by the surgeon of a satisfactory outcome, the patient's confidence in himself and his surgeon is heightened, so that he loses all dread of the second operation. Should complications (vitreous loss, etc.) occur at the time of the expression, the placidity of the patient and his easy acquiescence to all commands are important factors in enabling the surgeon to complete the operation satisfactorily. I myself would much rather operate on a patient who has this mental attitude than on one whose nervous hypertension has been lowered by preoperative narcotics.

TECHNIC

The point of the keratome is hooked into the conjunctiva about 4 mm. above the limbus. The conjunctiva is dragged down to the limbus, thus forming a fold. The keratome enters the chamber 0.5 mm. back of the limbus. The incision, which should not be more than 5 or 6 mm. in length, is thus strictly subconjunctival (fig. 1). After withdrawal of the keratome, the conjunctival slit is slightly enlarged laterally with scissors. The flap is then grasped by the assistant a little to one side of the midpoint by single toothed fixation forceps. Gentle traction downward serves the double purpose of fixation and causes the keratome wound to gape slightly (fig. 2). The iris is grasped near the pupillary margin, withdrawn and cut off by iris scissors held horizontally. In case of immature cataract, the lens is massaged through the cornea with a Daviel spoon. If blood from the iris or conjunctival flap fills the chamber, it is easily coaxed or syringed out (by means of the Fox irrigator with physiologic sodium chloride solution). The angles of the coloboma are then replaced, and the conjunctival flap is stroked into position. It will be seen that this method is very similar

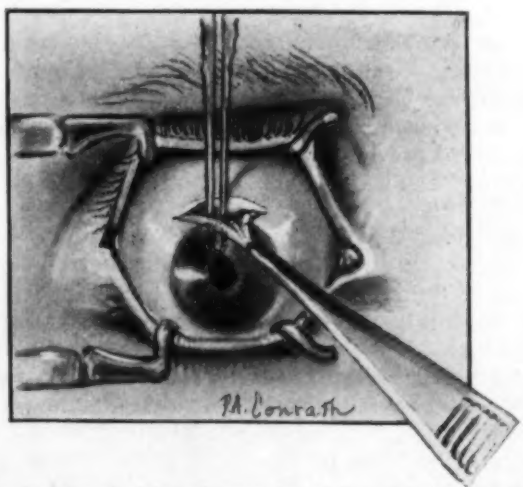

Fig. 2.—Fixation of globe and separation of lips of incision by downward traction on flap.

to the one advocated by Reese in the performance of iridectomy for glaucoma, except that the keratome incision is shorter and nearer the limbus.

Complete anesthesia of the iris is secured by injecting 3 or 4 drops of a 2 per cent procaine solution subconjunctivally just below the lower limbus. For surface anesthesia, 4 drops of 5 per cent cocaine solution is instilled.

THE EXPRESSION

The expression is performed from four to six weeks later. A trapezoidal conjunctival flap is fashioned above the cornea. From the ends of a short horizontal incision, scissor cuts are made downward and inward and downward and outward (fig. 3). In preparing this flap, a little difficulty is always experienced when

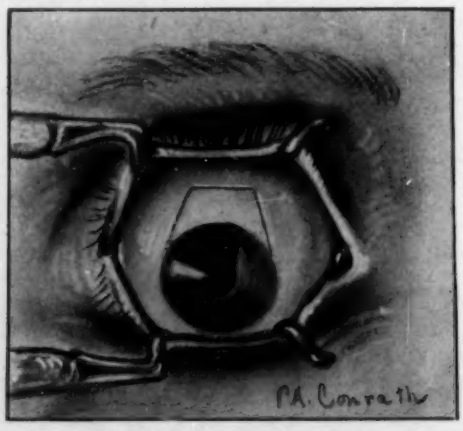

Fig. 3.—Outline and dimensions of trapezoidal flap.

separating it from the sclera immediately adjacent to the cornea. This is due to the fact that the conjunctiva at this site has become somewhat thickened and adhesions have formed, binding it rather firmly to the episclera. For separating these adhesions I have found the blunt dissector, originally devised by Beard, a very efficient instrument. The flap is grasped by smooth forceps and held taut by traction downward while the dissection is being carried out. Care should be taken to continue the dissection right down to the limbus; it is especially necessary that the lateral wings be thoroughly freed from the underlying tissue. The flap is about twice as thick as an ordinary conjunctival flap and is very much more sturdy. At this point a Verhoeff double-armed suture [2] is inserted in the episclera and the two needles are passed from below upward through the midpoint of the horizontal edge of the conjunctival flap in the precise manner that has been described by its author. The loops of the sutures are then disposed out of the way.

The four threads which extend vertically downward across the face of the cornea are passed between the arms of the single tooth fixation forceps which grasps the conjunctiva 1 mm. below the lower corneal pole. The threads, which are closely collected together, are *not* grasped by the fixation forceps. As the operator is about to begin the section (with a Graefe knife) the assistant grasps these collected threads with a second pair of fixation forceps and exerts gentle traction downward (fig. 4). The purpose of this maneuver is to keep the base of the flap away from the corneoscleral junction and sclera adjacent. Before resorting to this method I would occasionally have some difficulty in completing the section properly, as the knife would tend to "hang" at the moment of emergence (owing to the presence of adhesions and cicatricial tissue), the flap would be infolded, and a continuation of the section in the same plane would tend to sever it. The incision should terminate in the sclera just back of the base of the flap.

2. Verhoeff, F. H.: The Scleroconjunctival Suture in Cataract Extraction, Am. J. Ophth. 8: 886 (Nov.) 1925.

CAPSULECTOMY

Capsulectomy, i. e., removal of the anterior capsule with some type of capsule forceps, is preferred to capsulotomy with the cystotome. By allowing the blades of the forceps to separate widely, going well under the lateral limbs of the iris, I endeavor to secure a large bite of capsule with some underlying cortex. In the case of cataract with soft cortex or fluid beneath the capsule (morgagnian, etc.) the capsular surface may elude the grasp of the forceps, in which case a quadrilateral cut is made with the cystotome, and the capsule thus separated is removed with the forceps.

EXPRESSION OF THE LENS

The lens is expressed in the ordinary way. A spatula is held in the left hand and slightly depresses the posterior lip of the wound as the lens is emerging. The spatula may also be useful to aid in delivery of the lens should it, when partially delivered, hang in the wound. The delivery of the lens is unhurried and is especially slow if there is evidence of after-following cortex. Side to side pressure strokes with a Daviel spoon or hook are continued until all expressible cortex has followed the delivered lens. The moment the lens is delivered, the two arms of the suture are drawn up and loosely tied in a single knot. If any cortical material or loose shreds of capsule are visible in the pupillary

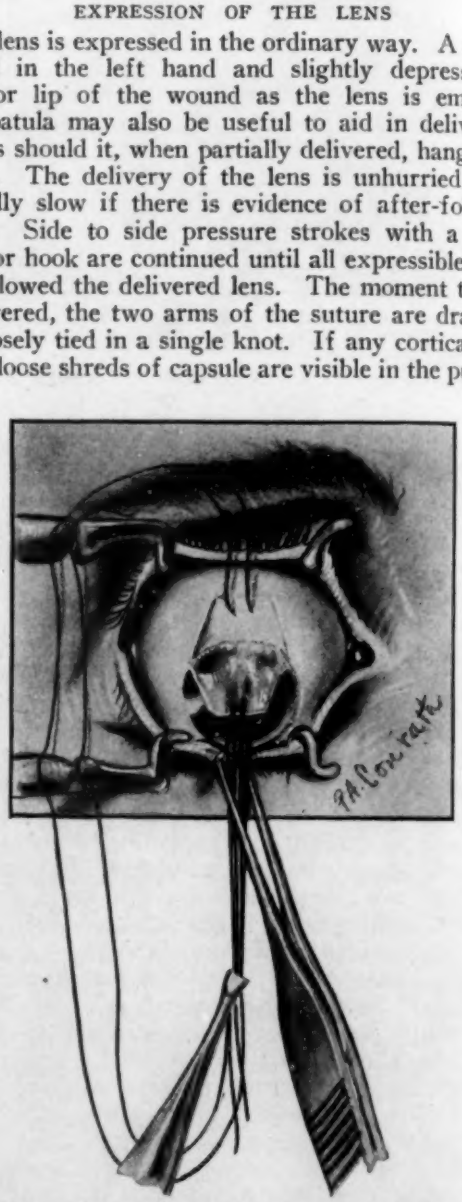

Fig. 4.—Flap held away from region of section by downward traction on threads passed through arms of fixation forceps.

space, preparation is made for irrigating the chamber. The two arms of the suture are entrusted to the assistant, who makes gentle lateral traction. The "pull" should be just enough to draw up the flap to its original position. The irrigating tip is inserted in one angle of the wound, the iris repositor in the other. Irrigation

is then carried out very readily, the repositor being turned slightly to spread the lips of the incision and thus insure easy egress of the cortex and irrigating fluid (fig. 5). If necessary, the positions of the tip and repositor can be reversed. During the irrigation the operator must watch closely for presentation of vitreous, which should be the signal for immediate withdrawal of both irrigating tip and repositor and the simultaneous tightening of the suture by the assistant. A granny knot then completes the tying of the suture. One may then proceed at his leisure to replace the angles of the coloboma and to pick up blood clots and mucous débris. Thanks to the suture, the toilet may be deliberately carried out even in cases in which vitreous has been lost. A conjunctival suture is placed in each upper angle of the trapezoidal flap (fig. 6).

VITREOUS LOSS PRIOR TO DELIVERY OF THE LENS

Two factors—the preformed flap with suture inserted and the completed iridectomy—are great aids in helping to cope with that most disconcerting complication, presentation or loss of vitreous prior to delivery of the lens. Such an occurrence necessitates an extraction with the loop, which is almost always accompanied by further loss of vitreous. This situation may well deter the boldest operator, and has been the occasion, more than any other, for "backing out" of the operation. With the two safeguards noted, one should hardly ever be deterred from completing a loop extraction. The instant the lens is out, the suture is pulled home and tied. Protruding beads of vitreous may be wiped away

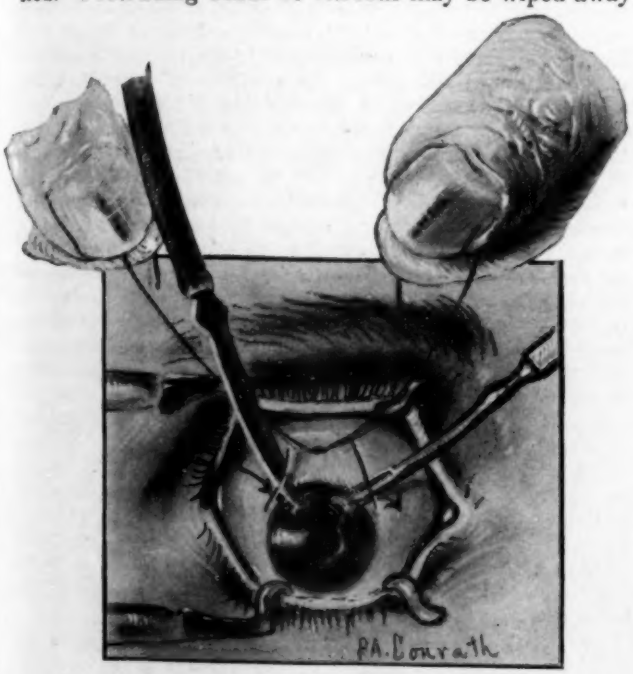

Fig. 5.—Irrigation under loosely tied flap.

or clipped off, and the toilet of the wound, including exact replacement of the angles of the coloboma, can be carried out with a precision and completeness that are impossible otherwise. In case of excessive loss of vitreous, it is desirable to fill the eye with physiologic sodium chloride solution.

ANESTHESIA

The manner of securing adequate anesthesia of the iris at the time of the iridectomy has been described. For the expression, it is usually sufficient to instil four times at two-minute intervals a 5 per cent solution of cocaine and epinephrine. Akinesia is not employed as a routine. One can gain much information as to the probable behavior of the patient by the way he reacts at the time of the iridectomy. The "squeezer" and "bad actor" will usually betray his true character. If deal-

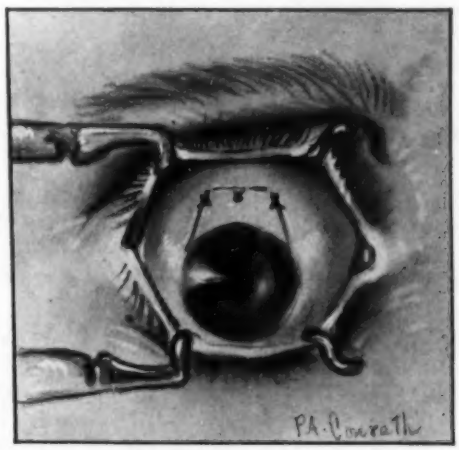

Fig. 6.—Completed operation.

ing with such a patient, one should most certainly splint the orbicularis. Intra-orbital injection of procaine is, in my opinion, unnecessary in cataract extraction.

AFTER-CARE

The prompt agglutination of the flap insures early reestablishment of the anterior chamber. It is practically impossible for the flap to be displaced, whatever position the patient may assume. It is thus possible (and desirable) to turn the patient to either side, to elevate the head of the bed, or in case of necessity (difficult urination, gas pains, hypostatic congestion) to get the patient out of bed. Codeine, one-half grain (0.03 Gm.) is given hypodermically the first night after the operation. The patient is permitted to get out of bed at the end of twenty-four hours; the eye is dressed at the end of seventy-two hours. A binocular bandage is reapplied for forty-eight hours. The operated eye is left open on the sixth day and the sutures removed on the seventh.

To illustrate the value of the large adequately anchored flap the following case is cited:

REPORT OF CASE

A. H., a man, aged 82, with a mature cataract, had pyelitis and cystitis incident to an enlarged prostate gland. The expression was performed, Oct. 14, 1925. Some difficulty was experienced in forming the flap and making the section, owing to the unruliness of the patient. The afternoon following the operation he became nauseated and vomited several times. During the night, the abdomen became distended, accompanied by frequent vomiting attacks and the passage of purulent and bloody urine. At the dressing the eye was found to be in good condition with the chamber reformed, the sutures holding perfectly. The abdominal distention failed to yield to the passage of a rectal tube, so an oxgall, magnesium sulphate and turpentine enema was given, followed by pituitrin "S" (surgical) hypodermically. This was followed by partial relief (expulsion of flatus, etc.). During the night he had a severe chill, after which the temperature rose to 102.6 F. His general condition improved following the administration of a purgative and hexylresorcinol. At no time during this stormy period was there any unfavorable reaction in the eye, and recovery ensued with excellent vision.

In seventy-six consecutive operations the ultimate visual results were as follows:

6/4, one; 6/5, seven; 6/6, eight; 6/8, sixteen; 6/10, sixteen; 6/12, seven; 6/16, seven; 6/20, two; 6/25, four; 6/32, three (corneal scars from trachoma); 6/40, one (dense membrane; patient died before discission); 6/80, one (diabetes, central retinitis); 1/32, one (dense corneal scar from trachoma); light perception, one (tabetic optic atrophy); total loss, one (choroidal hemorrhage).

There were four "loop" extractions and one intracapsular extraction (by traction). Vitreous was lost (from 1 to 4 drops) in ten cases. Discission was performed in twenty cases. There were no infections.

SUMMARY

1. Iridectomy under a conjunctival flap heals promptly, without reaction and with little or no danger of infection.

2. In case of immature cataract, opportunity is offered for artificial maturation.

3. Misbehavior by the patient will not imperil the success of the iridectomy and will warn the operator to use extra precautions (akinesia, lid hooks, etc.) at the time of the expression.

4. A realization of the painlessness of the first operation and postoperative period greatly heartens the patient and abolishes his dread of the second operation.

5. The trapezoidal flap possesses all the advantages of the small triangular flap and, in addition, (*a*) it is thicker and more sturdy; (*b*) it covers the entire section, and (*c*) it is held in perfect position under all circumstances by the central Verhoeff stitch and the lateral conjunctival sutures.

6. The steadying of the flap by downward traction on the threads of the Verhoeff stitch enables the operator to complete the section without fear of cutting off the flap.

7. With the Verhoeff suture loosely tied, the flap is drawn into good position and irrigation of the chamber may be carried out with great security. Should vitreous present or prolapse, the immediate tightening of the suture will cause the vitreous to recede or prevent further loss.

8. The toilet of the wound can be carried out leisurely and effectively even after vitreous loss.

9. There is little tendency for the iris to prolapse (no "visible" prolapses in seventy-six cases).

10. Iritis, if it occurs at all, is mild and easily controllable by atropine, heat and salicylates.

11. Anterior synechiae are very rare.

12. There are a large number of "keyhole" pupils.

13. The secondary membrane is usually very thin and can be sufficiently slit by a single vertical incision (Wheeler).

14. Thick membranes are dealt with by Ziegler's inverted V-shaped discission.

Metropolitan Building.

ABSTRACT OF DISCUSSION

Dr. Clarence King, Cincinnati: The conjunctival or corneal suturing of cataract wounds has been enthusiastically endorsed in recent years in this country by Verhoeff, Derby, Ellett, Howard, Berens and now by Dr. Green. Abroad it has been advocated particularly by Elschnig and Barraquer. Should the conjunctival suture be made before or after the incision? My own feeling is that it is better made before the eyeball is opened. This is particularly true if it is intended to cover most of the wound. Should we strive to obtain both advantages of the suture or content ourselves with a small flap to offer security and rapid healing? Much as I appreciate the marvelous healing and protective properties of the conjunctival covering for wounds, my preference would be for a small flap at the apex of the incision, as advocated originally by Verhoeff. In regard to passing the sutures through the fixation forceps with traction by an assistant, it would also seem that the simple act of laying them to one side, as practiced by Verhoeff, would be more advisable. I myself would be influenced in my choice of a technic for conjunctival suture by my desire to incorporate in it a safeguard with which I have had some considerable experience and of which I have become an enthusiastic advocate. I refer to the bridle suture through the superior rectus. This suture affords throughout the operation the well known advantages of the Angelucci fixation by means of the superior rectus muscle. It has been recommended by Elschnig, and was recently indorsed warmly by Axenfeld. The suture is held by the assistant with the same hand that uses the lid elevator for the upper lid. It can, of course, be used with a speculum and can be controlled when desired by the operator. From my experience with the bridle suture, I can substantiate the statements of Axenfeld, who says that it affords increased control of the eye, that it diminishes the pressure in the vitreous and the tendency of the wound to gape, and that it is an excellent safeguard against vitreous prolapse.

Dr. George S. Derby, Boston: Not very long ago, I asked the house surgeon at the Eye and Ear Infirmary in Boston to look up some of our recent cases of cataract extraction, and he looked up 150 cases, covering a period of about a year and a half, and to these I added fifty cases covering about the same period of time. The first fifty-two patients were operated on by nine different house surgeons; the second forty-nine were operated on by four assistants on the staff; then there were forty-nine hospital patients operated on by myself, and fifty private patients. In that series of cases there were only four in which vitreous was lost, or 2 per cent. There were three losses of vitreous in the hospital cases and one in my own 100 cases. As a matter of fact the house surgeons, some of whom were doing their first cataract extraction on the human eye, lost vitreous but once. It seems to me that, in view of these figures, there must be something in the technic that we use that is superior to Dr. Green's technic. This condition depends on three things: First, paralysis of the orbicularis muscle by injection of procaine in every case. Second, complete anesthesia of the eyeball, which cannot be produced by simply instilling cocaine into the eye. The orbital injection of procaine gives practically perfect anesthesia. Third, the scleroconjunctival stitch. In regard to Dr. Green's stitch, I do not think one can strictly call that the Verhoeff suture because the principle of the Verhoeff suture is that with a short conjunctival flap the suture is put into the sclera near the corneal margin and the wound is clamped down so that it cannot open. With a stitch such as Dr. Green describes, the conjunctival flap is long and the natural elasticity of the conjunctiva is sufficient, so that if the vitreous comes into the wound it can certainly stretch the flap. Also it seems to me that it is not desirable to have as large a flap as that, because bringing it down as Dr. Green has said makes it more difficult to see where the knife is going in making the corneal incision.

Dr. H. W. Woodruff, Joliet, Ill.: There is scarcely a single step or modification of any of the various procedures for cataract extraction that may not be open to discussion. Even those procedures which are designed to make the operation more safe may in themselves be an extra hazard. The operator who originated the idea of making the incision, cutting the capsule and cutting the iris with the cataract knife alone had certainly some advantage—he made the operation exceedingly short, and in this way it might be considered a procedure of safety. A few years ago I suggested a procedure which I called a safety procedure, especially designed for cataracts in which it was expected that there would be trouble during the extraction. I do not complete the scleral incision at first, but leave a small bridge of sclera, which is completed with scissors after the speculum is removed. Regarding the

preliminary iridectomy, I believe that this is certainly advisable in cases of cataract complicated by simple glaucoma. First the tension is reduced by a deep iridectomy, and the lens is extracted later.

DR. E. C. ELLETT, Memphis, Tenn.: In conclusion no. 8, Dr. Green says: "The toilet of the wound can be carried out leisurely and effectively even after vitreous loss." That is the greatest advantage that pertains to some form of suture after cataract extraction. One can at one's leisure remove all the cortical débris, etc., and certainly nothing so promotes rapidity of healing, and nothing so greatly reduces the incidence of secondary cataract.

DR. MEYER WIENER, St. Louis: I have the greatest respect for Dr. Woodruff's opinion, especially in surgery, but I would take issue with him in the statement he made in regard to the size of the incision. In my experience, the larger the incision the less danger of loss of vitreous, because with a large incision there is less pressure required to express the lens and consequently less danger of loss of vitreous. If the incision comes out considerably beyond the limbus, there is danger, because one is getting beyond the limit of the vitreous membrane. I think the closer one keeps to the limbus the less danger there is of loss of vitreous. I do believe that the incision should be large, and I would much rather have it too large than too small.

DR. WALTER B. LANCASTER, Boston: As I witness operations, my own and others, it seems to me that the accidents that happen, the things that go wrong, are more frequently due to imperfect anesthesia, to the fact that the patient continues to make some reaction to it, than to anything else. The matter of vitreous loss has been such a small factor in my experience that I hesitate to use a stitch. Vitreous does not come out of the eye until it is pushed out; it will not run out of the eye. The eye is like a rubber ball—it can be compressed—and that is the reason for closing the eye immediately if the vitreous does prolapse. The elasticity of the sclera causes it to suck in a little, and if there is a little prolapse the wound draws in, and coapts properly. I cannot see why more operators do not use a speculum that covers the whole length of the eyelid. Why have a speculum that leaves all this exposed? It is simple to have a speculum with a flap that covers all that, and one can use forceps, triangular keratome or sutures, and they do not touch the lid. Moreover, if there is a wound and one takes out a speculum of the first type, one is pulling the eye across the wound and may catch it and pull it open. But if one is pulling a flat plate across the wound, there is no such danger. There may be some objection to it, but if any one objects to it I should like to have them say why. I have used it for a long time and advocate it.

DR. ALBERT N. LEMOINE, Kansas City, Mo.: I would emphasize the value of subconjunctival incisions as used by Dr. Green in his keratome incision. In my experimental work, in which I did a great number of decisions on guinea-pigs and rabbits, the incidence of infections was from 10 to 15 per cent when I used the corneal incision; but after adopting the subconjunctival incision, I had only one infection, which would lower the incidence to about 2 or 3 per cent.

DR. JOHN GREEN, St. Louis: Dr. King very properly makes the point that it is far easier to fashion a flap of desired size and dimensions if the flap is prepared prior to section. No matter how skilful the operator may be, he cannot always foretell the size and shape of the flap that will be made by the Graefe knife on completing the section. Since using downward traction by means of the second pair of fixation forceps, it is easy to see where the knife is coming out, so that the incision need not be too peripheric. I think it ought to be a little back of the sclerocorneal margin. The flap tends to assume a triangular shape, so that the only portion of the field that is obscured is that portion occupied by the gap in the iris. There is no likelihood that the knife will catch on the iris, and the points of entrance, exit and emergence are constantly visible. I am greatly indebted to Dr. King for drawing my attention to the "bridle" suture. There is no reason why this suture should not be used, and it may prove to be an additional safeguard. The percentage of vitreous loss is admittedly high. I cannot account for it on the basis of deficiency in technic, inadequate anesthesia or failure to splint the orbicularis. I suspect that a given series of cases will, without rhyme or reason, present a higher percentage of vitreous loss than another series, in both of which the same technic is employed. In no case was the loss excessive and in none was healing impaired. I cannot agree with Dr. Derby that my suture is not the Verhoeff suture. It is inserted transversely in the episclera and brought out through the conjunctival flap in the manner described by its author. The only difference is that it is inserted a little higher. The flap, of course, is very different from the small triangular flap described by Verhoeff and pictured by Howard. Dr. Woodruff speaks of a small scleral incision which is enlarged with scissors as a safeguard against vitreous loss. I agree with Dr. Wiener that a large primary incision is one of the safeguards against serious loss of vitreous. One great advantage of any suture, as Dr. Ellett states, is that it enables one to complete the operation with proper toilet even after vitreous loss. The improvement in anesthesia spoken of by Dr. Lancaster is very important. I feel that it is unnecessary to use an intra-orbital injection of procaine, but I use it subconjunctivally and allow a sufficient time to elapse so as to secure complete anesthesia of the iris. It is interesting to learn from Dr. Lemoine that a conjunctival flap proved a distinct safeguard against infection in the eyes of rabbits; my conviction is strengthened that, as far as possible, all intra-ocular operations should be performed under such a flap.

THE RETENTION OF VEGETABLE MATERIAL IN THE STOMACH

REPORT OF CASE *

LLOYD BRYAN, M.D.
Assistant Clinical Professor of Roentgenology, University of California Medical School
SAN FRANCISCO

The retention of vegetable material in the stomach, except in cases of complete obstruction of the pylorus, is rare. Perhaps the earliest case is the one reported by Quain [1] (for Buckwill) in 1854. The largest series is one of eight cases reported in 1923, by W. E. Hart.[2] Single cases have been reported by Schreiber,[3] Peple,[4] Outten,[5] King,[6] Tschassownikoff,[7] Upson,[8] Adams [9] and others. The cases reported have all been compact masses of vegetable matter and removed as such. Six of Hart's cases were composed largely of persimmon, Adams' case entirely of pumpkin, and the others of various vegetable fibers. Two of Hart's cases were complicated by gastric ulcers. In the other cases no organic lesions were demonstrable.

In the case here presented there was no history of the eating of persimmons; the retained matter was

* Read before the Section on Radiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

1. Quain (for Dr. Buckwill): Stomach of an Insane Patient Filled with Coconut Fiber Which Caused Death by Perforation, Tr. Path. Soc. London **5**: 145 (May 16) 1854.
2. Hart, W. E.: Phytobezoars, J. A. M. A. **81**: 1870 (Dec. 1) 1923.
3. Schreiber, J.: Ueber einen Phytobezoar in Magen einer Frau und essen Diagnose, Operation und Heilung, Mitt. a. d. Grenzgeb. d. Med. u. Chir. **1**: 729, 1892.
4. Peple, W. L.: Globus Diospyri Virginionae Seminum: Report of a Case, Virginia M. Month. **48**: 596 (Jan.) 1922.
5. Outten, W. B.: A Case of Double Gastrolith Removed by Gastrotomy; Recovery, M. Fortnightly **6**: 445, 1894.
6. King, H. P., cited by Outten (footnote 5).
7. Tschassownikoff, P.: Phytobezoar, Deutsche med. Wchnschr. **50**: 1480 (Oct. 24) 1924.
8. Upson, W. O.: Roentgenological Findings in a Case of Phytobezoars, Radiology **4**: 49-51 (Jan.) 1925.
9. Adams, Wilmot: Case of Vegetable Material Simulating Carcinoma of the Stomach, Brit. J. Surg. **13**: 189 (July) 1925.

composed of celery fibers, prune and raisin skins, and other cellulose material which could not be identified. The mass was soft and loose and had to be removed with a spoon and by sponges on a sponge stick.

REPORT OF CASE

A. R., a man, aged 55, a native of India, entered the San Francisco Hospital in the medical service of Dr. Le Roy H. Briggs of the University of California in Dr. Gordon E. Hein's ward, July 30, 1925. The family history was negative. The past history was uneventful so far as concerns the present illness. The bowels tended to diarrhea. The patient never had constipation. Urination was frequent and with large amounts. The appetite was good. The patient slept well. He weighed 82 pounds (37 Kg.). He thought his normal weight was about 100 pounds (45 Kg.).

Up to three years before, the patient had been very well. About that time he began to feel some abdominal distress, at first after meals and later constantly. It was characterized

Fig. 1.—Vegetable material in the stomach.

by a feeling of fulness and lightness, relieved somewhat by belching. There was occasional vomiting. At the same time there was a dull pain in the epigastrium and across the abdomen but not referred to the back or shoulder. The stools had always been formed and never tarry or clay colored. He had had diarrhea at times, sometimes six or eight stools in a day. He had never been jaundiced.

The general examination was negative except for the following points: The abdomen was not distended or markedly scaphoid, but there was considerable evidence of wasting. There was no visible peristalsis. The liver was felt two finger breadths below the costal margin on deep inspiration. No other organs or masses were felt. Two large para-umbilical veins coursed to about 2 inches (5 cm.) above the umbilicus, where they disappeared. No tenderness was definitely elicited.

August 1, Dr. Edwin Bruck found visible intestinal peristalsis. The liver and spleen were palpable. The Achilles and knee jerks were absent.

August 5, Dr. Hein found marked clubbing of the fingers. The knee jerks were absent.

August 7, eye examination showed arteriosclerosis of the ocular vessels.

August 18, an Ewald meal was given. The highest free hydrochloric acid was 30. The highest total acidity was 90. There was no lactic acid.

August 24, the blood sugar (fasting) was 301 mg. per hundred cubic centimeters of blood.

September 15, esophagoscopy was attempted but was unsuccessful.

September 18, gastrotomy was done under a local anesthetic by Dr. Harold Brunn, with removal of foreign material. The stomach was large and atonic, and seemed to be filled with a boggy mass of foreign material. The gastric wall was carefully incised along its anterior surface for a distance of 2½ inches (65 mm.). With a spoon and sponges on sponge sticks, a large quantity of cellulose and other bits of undigested food material was removed.

September 18, it was reported that the patient ate chocolates during the night.

September 26, the stomach was washed. Three liters was given by stomach tube, without any return.

October 11, the blood sugar was 204 mg.

The blood sugar varied from 126 to 304 mg. per hundred cubic centimeters of blood. The Wassermann reaction of the blood was negative. The urine continually contained a large amount of sugar, but no acetone or diacetic acid. A blood count revealed: 80 per cent hemoglobin; red cells, 4,480,000; white cells, 5,880; polymorphonuclears, 52 per cent; small lymphocytes, 38 per cent; transitionals, 7 per cent; eosinophils, 2 per cent; basophils, 1 per cent.

It was impossible to get the patient sugar free, as he would not obey rules. He was transferred to the relief home in October, and reported back to the hospital for examination. Three months after the operation the roentgen-ray examination showed a normal appearing stomach. The general condition of the patient remained stationary. At the first roentgen-ray examination the appearance of the stomach was such that we assumed that the patient had not abstained from breakfast, and he was returned to the ward with special instruction as to his fasting the next morning. At the second examination the fluoroscopic appearance of the stomach was unchanged. On the third day he was again brought to the roentgen-ray department, fasting all night and after a thorough gastric lavage under the direction of Dr. Hein. At that time the stomach appeared as shown in figure 1. The opaque material showed an irregular network structure of alternating areas of opacities and nonopacities which could be changed by palpation. The stomach was large and atonic, and there were no defects in the gastric outline. The pylorus was smooth and patent, and the duodenal bulb large and smooth. There was a two-thirds six hour barium gastric residue and a large twenty-four hour opaque residue. The conclusion from the roentgen-ray examination was: retained foreign material in the stomach.

At operation, aside from the retained vegetable material in the stomach no lesion was found. The pylorus was smooth and wide, admitting two fingers readily. Three months after the operation the roentgenogram of the stomach was normal and there was no six hour gastric residue. This case is of particular interest on account of the diabetic condition.

COMMENT

Dr. Hilmar O. Koefod[10] of Santa Barbara cites a case of a boy, aged 6 years, who had had severe diabetes for two and a half years. This was in the preinsulin period and his diet was made up largely of vegetables low in carbohydrates. The boy died from an intestinal obstruction from a large bolus of coarse vegetables in the lower ileum.

Aside from these two cases I have been unable to find any report of vegetable retention in diabetic patients. However, it would seem that in cases of epigastrium pain associated with diabetes this condition should at least be considered. The diagnosis is readily made by a careful roentgen-ray examination.

10. Koefod, H. O.: Personal communication to the author.

In differential diagnosis, polyposis and true phytobezoars are the only conditions that may be confusing. In polyposis there is always bleeding and the typical roentgen-ray picture of finger-like indentations extending into the opaque mass usually from the greater curvature. In true phytobezoars there is a hard, smooth, movable mass which displaces the opaque mixture and into which the mixture does not penetrate.

SUMMARY

Retention of vegetable material may occur in the stomach without forming solid tumor masses.

It may be associated with diabetes.

135 Stockton Street.

ABSTRACT OF DISCUSSION

DR. W. W. WATKINS, Phoenix, Ariz.: In San Francisco, at the time the American Medical Association met there, we had on exhibition a film of hair-ball of the stomach. The patient was operated on shortly after, and I have brought the

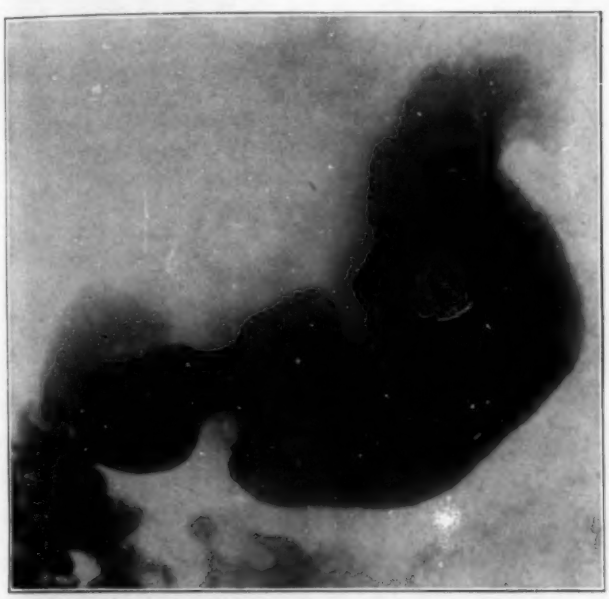

Fig. 2.—Stomach normal, two months later.

specimen that was removed from the stomach. It is the ordinary type of hair-ball. This girl was 15 years old and came for examination for suspected ulcer of the stomach. My associate, Dr. H. P. Mills, in 1911, reported the case of an insane woman who was seen by the hospital attendants to pick up objects from the floor. No one suspected that she was swallowing them. She never had any trouble with her stomach. She died. At the necropsy 1,446 objects were found in her stomach, including, among other things, 148 small seeds and 7 prune seeds; 453 nails; 42 screws; 9 bolts; 5 teaspoon handles; 1 nail file, 3½ inches long; 3 pieces of steel; 5 thimbles; 2 salt shaker tops; 63 buttons; 105 safety pins; 115 hair pins; 52 carpet tacks; 136 common pins; 16 large white-headed pins; 37 needles; 7 broken coat rack hooks; 1 string of beads 4 feet long; 7 large loose beads; 85 small stones and pieces of glass; 54 pieces of metal, and 19 hooks and eyes. However, none of these articles produced any symptoms of which the patient complained. Her appetite was good and apparently digested food well. The stomach was very fibrous and the wall thickened, but it is the most striking illustration of the ability of a stomach to retain foreign material without symptoms being manifested that has ever come to my attention.

DR. LLOYD BRYAN, San Francisco: In stomachs retaining foreign bodies there may be a slight amount of retention of vegetable fibers.

PSEUDOHYPERTHROPHIC MUSCULAR PARALYSIS

PRELIMINARY REPORT OF A CLINICAL STUDY OF THIRTY-NINE CASES

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CHICAGO

This condition is variously known as pseudohypertrophic muscular paralysis, progressive muscular dystrophy, or iodiopathic muscular atrophy. Myopathies are primary diseases of the muscular system characterized by weakness and wasting (with or without an initial enlargement) of the muscles, and not due to a primary lesion in the nervous system.

Barnes classifies the myopathies as:

A. True myopathies:
   1. Pseudohypertrophic muscular paralysis.
   2. Juvenile type (Erb).
   3. Facioscapulohumeral type (Landouzy-Dejerine).

B. Allied types:
   1. Distal type (Gowers).
   2. Myotonia congenita (Thomsen).
   3. Hypertrophic musculorum vera (Spiller).
   4. Transition types.

C. Type sui generis:
   1. Amyotonia congenita (myotonia congenita of Oppenheim).

Sachs' classification of primary dystrophies is as follows:

	Muscular Pseudo-hypertrophy	Juvenile Form of Progressive Muscular Atrophy (Erb's Type)	Landouzy-Dejerine Type, "Infantile Form"
Part first affected	Legs (calves)	Shoulder girdle	Face and shoulder girdle
Distribution of hypertrophy	Calves (rarely thighs)	Muscles around shoulder and pelvic girdles	None
Distribution of atrophy	Thighs; deep muscles of back; shoulder and scapular muscles Calves during later period, at which time also general atrophy	Thighs; deep muscles of back, upper arm Hypertrophied parts may become atrophic in later stages	Face muscles, including lips and orbicularis palpebrarum Shoulders and scapular muscles
Parts remaining normal	Face, forearm and hand, except in last stages	Face, forearm, hand and leg muscles except in last stages	Forearm, hand, leg and deep muscles of back

According to Naccarati, there are the following types:

Infantile type of Werdnig-Hoffman, due to degeneration of the lower motor neurons.
Juvenile type, or scapulohumeral type of Erb.
Facioscapulohumeral type of Landouzy-Dejerine.
Pseudohypertrophic paralysis of Duchenne.
Hereditary type of Leyden, Moebius.

These types may be various manifestations of the same entity.

Generally speaking, if definite pseudohypertrophy occurs especially in the lower extremities, it is a case of pseudohypertrophic muscular paralysis. If the face is affected early, it is a case of the facioscapulohumeral type of Landouzy-Dejerine. Other cases belong to the juvenile type of Erb.

Various theories of the causation proposed are those of defective vital endurance. Collins said it was an

expression of prenatal inadequate endowment, and Barker believes that the cause is in the germ plasm.

The condition may appear at any time from birth to 30 years. Oppenheim reportd a case in a man, aged 58.

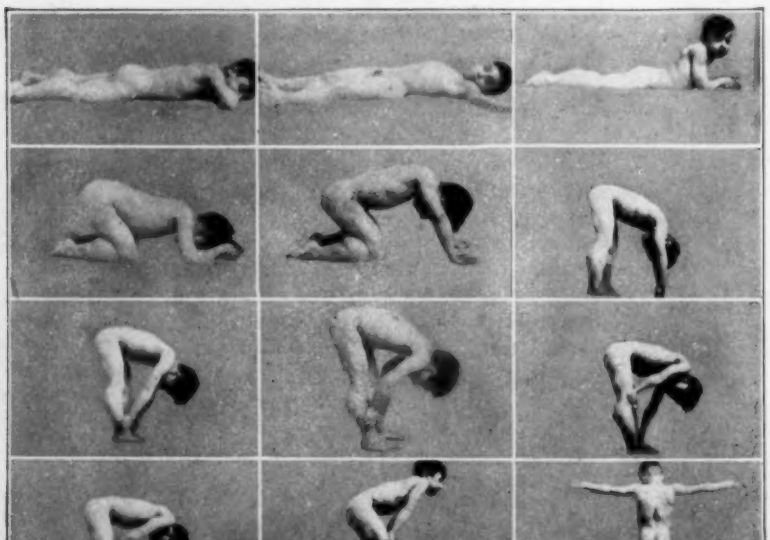


Fig. 1.—Typical method of rising from the supine position; powerful musculature may be noted.

It is much more common in males than in females. Church was shown by Charcot a woman, aged 35, with this condition. Porter says that he has seen but one case in a female. Janney, Goodhart and Isaacson had one adult female case in a series of nine. In this report of thirty-nine cases, nine were in females. In my first fifteen cases, there was but one female.

The condition is said to be transmitted through the females to the males. Paternal heredity is probably not a predisposing cause. Two of my patients had brothers who died of this trouble.

Nationality is unimportant. One of the patients in this series is a Chinese boy.

In one of the cases here reported, the patient is a colored man.

It is worthy of note that in practically every case of this series, the patients have been very poor.

It is undoubtedly true that many cases are more severe after an acute infection; i. e., the infection aggravated a preexisting condition.

Metabolism is the most important factor—muscle metabolism—and it is probably from this angle that more light will be thrown on this condition than from any other—the cause of the disturbed muscle metabolism.

ENDOCRINE DISORDER

Timme believes that the pineal shadows seen in the roentgenograms are proof of the causative factor. He observed five cases in a family in which there were fourteen cases. Four of the five showed pineal shadows. He did not examine the other nine. He reports cure in two cases and a definite improvement in four cases. He believes that one half of all cases have pineal shadows. Normally after 25 years of age, a shadow is seen in 2 per cent of skulls. In persons over 50, all show shadows. He states that all patients under 20 having a pineal shadow almost invariably have muscle weakness. He advises three or four different lateral views in the roentgenograms. I have not been able to see any pineal shadows in the films of my own cases, or in the reproductions of Timme's.

Janney, Goodhart and Isaacson found pineal shadows in two of nine cases. They, as well as McCrudden, believe that the disease is an endocrine dysfunction affecting carbohydrate metabolism.

Gibson, Martin and Buell believe that endocrine disturbance in this condition is indicated by the hereditary character of the condition; the metabolic abnormalities; the occasional improvement at puberty when glandular readjustments occur; the improvement following endocrine therapy, and the development of the disease in polyglandular dystrophies, especially in association with dystrophia adiposogenitalis.

McCrudden believes that the hypoglycemia and fatty infiltration are due to impaired glycogenesis. It is possible that the carbohydrates of the food are changed largely into fat instead of glycogen, and that this impaired glycogenesis is due to suprarenal or other endocrine disorder.

It is my belief that the same etiologic factor is responsible for the endocrinopathy as for the muscular dystrophy. I incline to this view, first, because of the very definite improvement that I have seen in several cases in this series under epinephrine given hypodermically and hypodermic tablets dissolved under the tongue and, secondly, because of the associated glandular dystrophy in several of my cases. Many of the other cases may be definite glandular types as yet unclassified accurately.

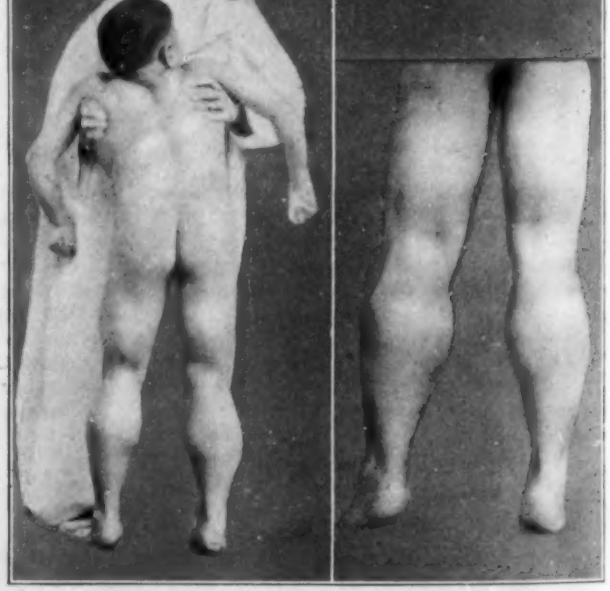


Fig. 2.—Powerful looking calf muscles, with inability to stand.

The situation seems to be analogous to one in which there is a coal bin that has a poor supply of coal, the coal is of poor quality, and the furnace is not in good

enough condition to burn the coal in order to obtain the maximum heat.

PATHOLOGY

Erb believed that the muscle changes were due to trophic disturbances. In spite of this, there are no demonstrable primary lesions in the nerves or spinal cord. Gowers did not believe that it was a trophoneurosis. Brooks found cells in the dorsal ganglions shrunken. Friedman believes that the lesion is at the neuromuscular junction.

In the muscle there is hypertrophy of individual muscle fibers followed by atrophy with loss of transverse striation, splitting, vacuole formation, increase of muscle nuclei, and fatty degeneration with increase of fibrous connective tissue.

It is a complex degenerative atrophy. Hypertrophic and atrophic fibers are found in the same muscle, the number of the latter gradually increasing until the whole muscle is more or less completely degenerated.

The increase of size in some of the muscles at first is due in part to actual hypertrophy, but later entirely to pseudohypertrophy depending on the increase of connective tissue and infiltration by fat, the degree of each of these varying with the group of muscles involved. Although the degeneration is attended by hypertrophy, the end-result is atrophy.

Dr. J. J. Moore, who examined muscles removed from two cases in this series, reported various changes in the muscles, from areas of greatly enlarged muscle fibers to those in which the fibers were small and atrophic, with an apparently increased number of nuclei. Fissuring of the fibers was common. Where the fibers were greatly decreased in number and atrophic, the connective tissue was increased, and here were found from a few to a large number of fat cells producing the pseudohypertrophy. Round cells were numerous between the fibers in certain areas.

After a very careful study of the same material, Dr. G. B. Hassin concluded that the muscle tissue was replaced by connective tissues which harbored the fat.

SIGNS AND SYMPTOMS

The history is very important. It usually consists of a story of delayed walking, sometimes till the third or fourth year. Tiptoe walking is the rule. There is an awkward, waddling, unsteady gait with inability to go up and down stairs. These children fall frequently and may be unable to rise without assistance. The onset is gradual, with increasing weakness. They tire easily.

Examination of the nude patient reveals marked lordosis, which is compensatory and secondary to the hip flexion, which is due to weakness of the hip extensors. This lordosis is not "fixed," because it disappears (or might become a kyphosis) when the patient sits.

A protuberant abdomen is the rule, as are enlarged, firm calf muscles. There is a myopathic facies, dull and masklike, with inability to elevate the angles of the mouth, causing the "rire en travers," or transverse smile (facial type) "tapir mouth." There may be difficulty in closing the eyelids. The gait is waddling and awkward. The feet are wide apart and are sooner or later in a position of equinus. They are swung forward rather than lifted, and are carried high to clear the ground of the toes, because of weakness of the anterior tibial group of muscles. It appears to me that it is a combination of the "steppage" gait plus the gait of a pregnant woman. The child sways from side to side. With the weight on the left leg, he inclines to the left to keep the center of gravity over the left acetabulum; as the weight goes to the right, he sways to the right so that the center of gravity is over the right acetabulum.

He cannot sit down slowly; he collapses into the chair unless he uses his arms and hands to break the fall. Winged scapulae (scapulae alatae) are due to muscular atrophy. The "wasp" waist of Marie is due to the vertical direction of the lower ribs and contraction of the waist at this level.

"Loose shoulders" cause the "slipping through" when an attempt is made to pick him up from the axillae. His head telescopes into the thorax, because of weakness of the serrati, pectorals and latissimus dorsi muscles. There is inability to go up and down stairs; or,

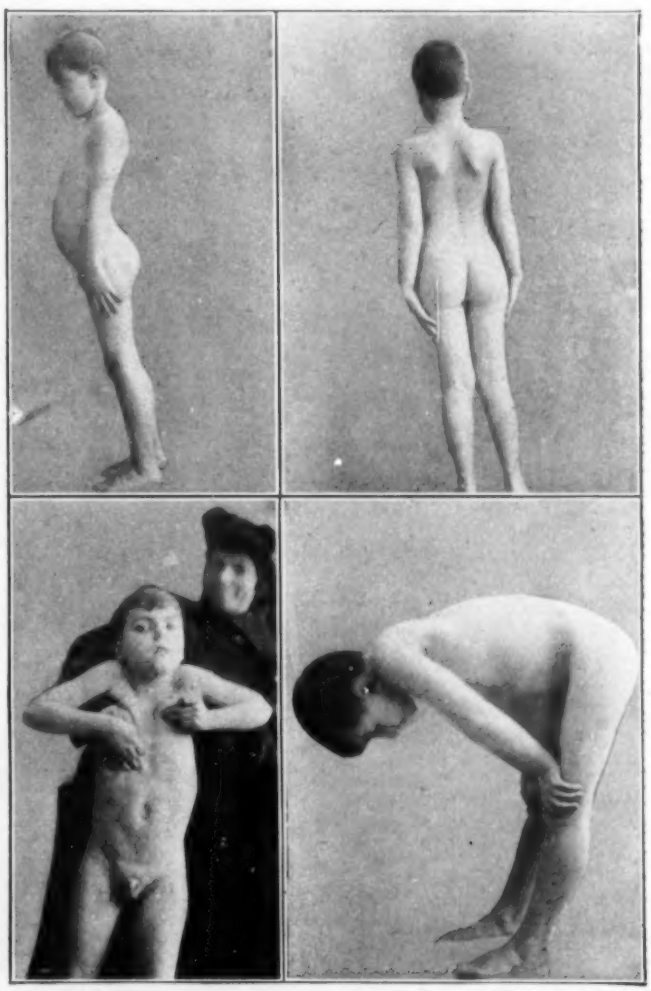


Fig. 3.—Increased lumbar lordosis; prominent abdomen; scapulae alatae; weakness of shoulder girdle.

if he can, he does so clumsily. Stumbling and falling are very common. If he can rise from the floor from the supine position he does so in a classic way; viz., he turns over on his face, rests on his elbows and knees, and climbs up his legs by putting the hands on the ankles, then the legs, then the knees and thighs, and by a supreme effort stands up. This is due chiefly to weakness of the glutei, the quadriceps extensor and the erector spinae muscles. The shoulder and arm groups of muscles may be affected. Gowers says that the supraspinatus is the last to be affected. Collins and Climenko give the following order in which the muscles are involved: dense, thickened muscles: calves, sartorii, glutei, triceps, deltoids, infraspinati.

There is atrophy of the pectoralis major, trapezius, serratus magnus (anterior portion), latissimus dorsi, biceps, quadriceps femoris, and abductors.

The tendon reflexes are at first unchanged; later they grow less active and at last disappear. The superficial reflexes may be unchanged. Fibrillary contractions may occur. There is lessened excitability to both electrical currents, but no reaction of degeneration. Sensation is normal, and sphincter action is normal.

Mentality is normal, with frequent exceptions. In six cases of this, the patients were subnormal. One must be careful in distinguishing between mental deficiency and deficient training or education.

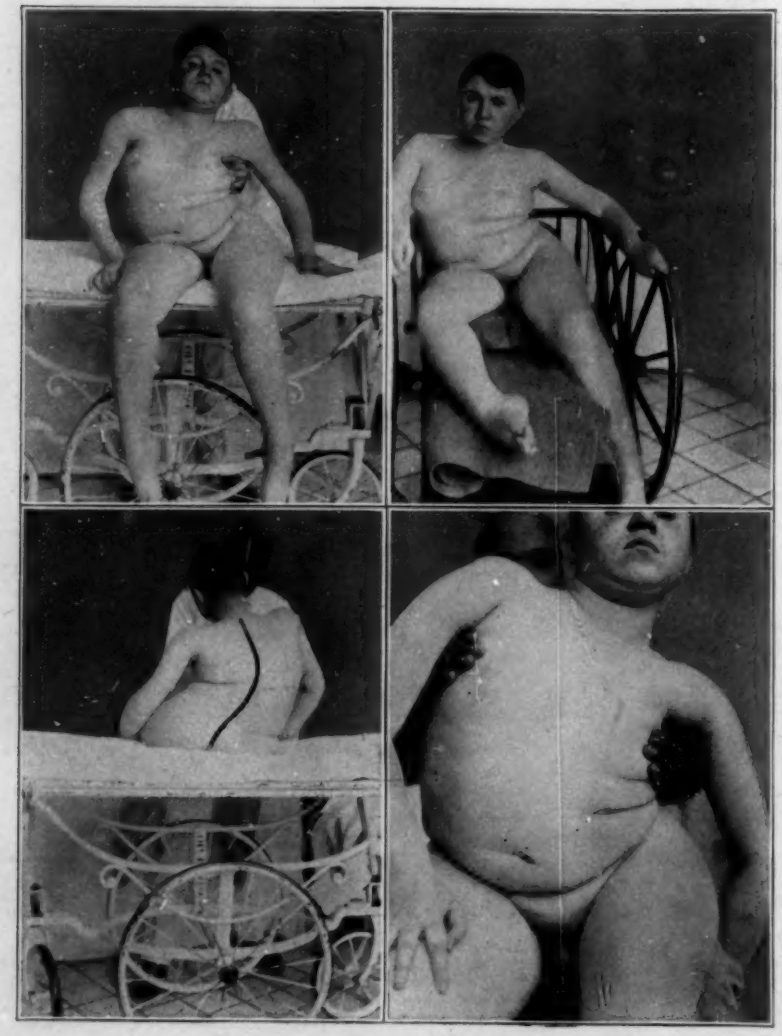


Fig. 4.—Adiposogenital dystrophy.

The urine shows a marked decrease in preformed creatinine, with an unusual amount of creatine. The blood shows the creatine content normal, but creatinine is low. There is a definite hypoglycemia with delayed glucose utilization, as shown by the hourly blood sugar curve. Altered sugar tolerance is found.

Janney, Goodhart and Isaacson found underdevelopment with rarefaction of skull and long bones. They found pineal shadows in two cases. One case showed acromegalic changes.

ASSOCIATED CONDITIONS AND COMPLICATIONS

Contractures are the most important. They usually involve the Achilles tendon, the flexors of the knees, and the hips. Scoliosis may develop from habitual postural causes. One patient in the present series had frequent pathologic dislocation of one shoulder, always from a slight cause. Ordinary fractures and dislocations were not found in this series. It is probable that these children do not indulge in the hazards of the ordinary child and therefore are less liable to injury. Moreover, when they fall, they "fall in a heap" and rarely suffer severe injury.

One patient showed generalized amyotonia. Adiposogenital dystrophy was found in four cases in this series: three in males and one in a female. Ober saw one patient that was typically acromegalic.

Intercurrent disease is the usual cause of death.

DIAGNOSIS

The direct diagnosis is based on a good history, with especial reference to the important points mentioned under symptoms plus a good physical examination with the patient nude.

The differential diagnosis is usually not difficult. The most important conditions with which it is confused are:

Tuberculosis of the spine, which shows muscle spasm, limitation of motion, pain and tenderness; limp if the psoas muscle is irritated; military attitude; night cries; deformity, and positive roentgen-ray findings.

Infantile paralysis, with a history of a definite attack with fever, gastro-intestinal disturbance, etc., with paralysis, usually of the flaccid variety. No hypertrophy, but rapid atrophy. There is a regular distribution of affected muscles corresponding with the portion of the cord affected. This is not true in the dystrophy. In Boston, in 1921, I saw a girl of 10 in whom the differential diagnosis between these two conditions could not be made on the first examination.

Congenital dislocation of hips, with its history of late walking, lordosis and waddling gait. Palpation fails to detect the head of the femur in its normal position and does find it out of the acetabulum. No muscle weakness is found, and roentgen-ray examination shows the dislocation.

Rickets. There is a definite condition known as the pseudoparalysis of rickets, which is accompanied by the findings so characteristic; viz., enlarged epiphyses, pot belly, and deformity of the long bones, such as genu varum, genu valgum, and anterior bowed tibia. Other findings are the rachitic rosary, square head, and the alterations in blood chemistry. A history of malnutrition is always present.

Charcot-Marie tooth disease or progressive muscular atrophy, characterized by its familial nature and its usual origin in the muscles of the feet. There is wasting of the peronei, extensor digitorum communis, and small muscles of the feet. Talipes equinovarus is common; later the legs and arms may be affected. The "monkey" hand is found. Fibrillation may or may not be present, and there is incomplete reaction of degeneration.

Syringomyelia. This condition shows early involvement of the finger muscles. In dystrophy, the finger muscles are usually unaffected to the last.

Amyotonia congenita. Oppenheim's disease. During pregnancy there is not much "kicking" by the fetus. Examination reveals loose joints, no hypertrophy, no talipes equinus, but usually a valgus deformity, the so-called pad foot. A persistent thymus may be present. This is found by percussion and roentgenogram.

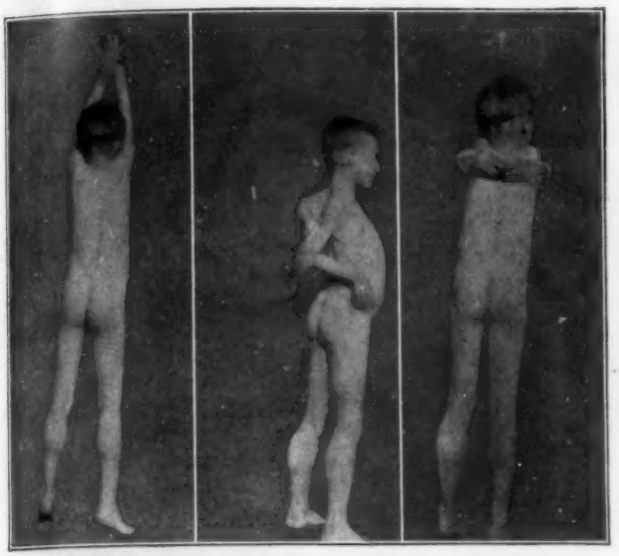


Fig. 5.—Marked relaxation of trunk, shoulder, girdle and arm muscles.

Myotonia congenita. Thomsen's disease. Heredity is very strong. (The disease occurred in four generations of Thomsen's family.) Examination reveals hypertrophy of the muscles in general. There is delayed relaxation of the muscle, and fibrillary contractions are present. Dystonia musculorum deformans is a condition manifested by a peculiar torsion of the pelvis and trunk, and should not be easily confused with muscle dystrophy.

Multiple sclerosis is characterized by intention tremor, scanning speech, nystagmus, paralysis which is spastic, and increased reflexes.

Peripheral neuritis, in which there is a history of infection, and examination reveals the sensitiveness of the muscle itself. No paralysis is found.

Myasthenia gravis is easily differentiated by the limitation of the disturbance chiefly to the muscles of the jaw.

COURSE

The course is very slow. In the younger patients it is more rapid; after puberty, the disease advances slowly. Gradually more and more power is lost. The patient becomes chair-ridden or even bedridden. Wasting becomes more complete, and the pseudohypertrophy might disappear. He may be unable to do more than use his hands. The course may be from thirty to forty years. Remissions are common, and because of this fact various therapeutic measures have been accredited with remedial effect.

PROGNOSIS

As to life, the prognosis is poor, because of the frequency of death from intercurrent infection. The statement that death is usually caused by tuberculosis is open to considerable doubt. As to improvement, there is a fair chance; i. e., a remission. The rule is for cases gradually to go on to the stage of the patient's being chair-ridden until death, usually between the fourteenth and eighteenth years.

TREATMENT

Tonics are of value as tonics and have no specific action. Funston found calcium lactate of definite value. It should be given in very large doses.

The diet should consist chiefly of fresh fruits and vegetables. The animal proteins are probably harmful.

All the vitamins necessary can be obtained from a diet rich in fresh fruits and vegetables. The commercial products of vitamins are not advisable because proper food is sufficient. Parhon and Savini fed two children with extract of fetal muscle and reported improvement.

Until the relation of the glands of internal secretion to this condition has been more definitely worked out, not much can be hoped for by endocrinotherapy. However, when there are definite indications for specific glands, they should be given. The chief glands indicated seem to be thyroid, pituitary and suprarenal. It seems rational in those cases associated with dystrophia adiposogenitalis that pituitary should be given and in addition thyroid. Epinephrine seems to me to be of value and should be given hypodermically or under the tongue. The preparation that I use is the hypodermic tablets of $\frac{3}{200}$ grain dissolved under the tongue three times daily. I believe that it produces a hyperglycemia and increases the glucose utilization.

According to Kramer,[1] epinephrine mobilizes stored glycogen. Normally an increase of sugar in the blood causes a drop in phosphorus and a drop in potassium. This is due to the fact that the muscles take up sugar and build it into a hexose-phosphorus compound that breaks up into glycogen. Then the phosphorus and potassium levels are restored. Janney recommends pituitary, but offers no promise of cure. In the administration of glandular products, attention to the hormonic signs is important, and the so-called intestinal reaction of Engelbach and Tierney looked for in the administration of pituitary glands. Timme outlines his treatment as follows: pineal substance, one-tenth grain (6 mg.) three times a day for three weeks out of five

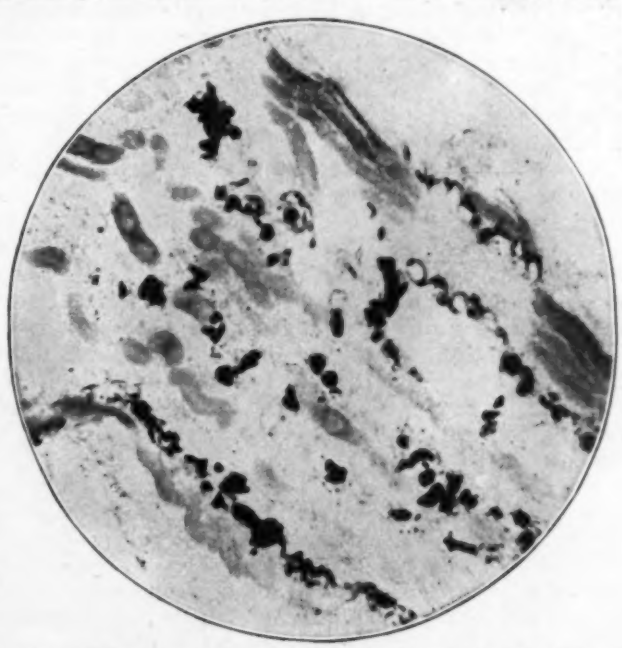


Fig. 6.—Appearance of section of muscle: fat and fibrous tissue and muscle changes.

1. Kramer: Personal communication to the author.

or six, then thyroid, hypodermically and by mouth, then pituitary extract in addition, and, as they grow older, orchitic substance. He reports cure in two cases and definite improvement in four.

The first warning is to avoid fatigue. Rest at the outset is advisable. Muscle education before a mirror

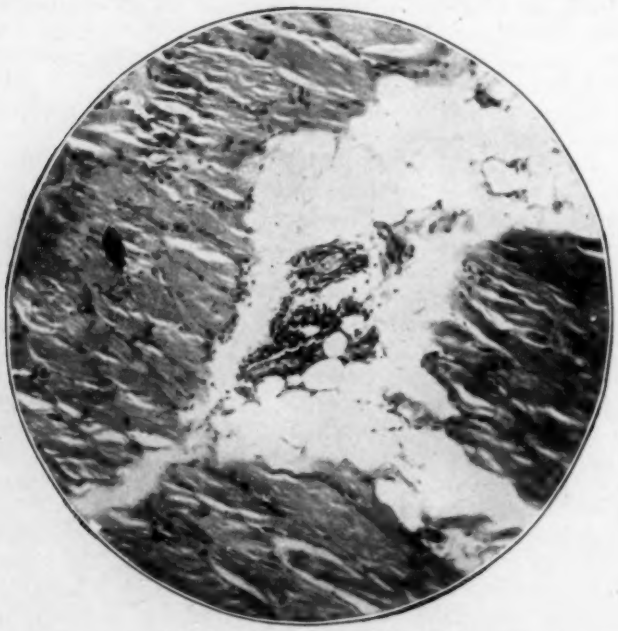


Fig. 7.—Round cell infiltration.

is valuable. Electricity is of value in maintaining good tone and circulation. Massage is of some value. It should be carried out under the supervision of a skilled person. Osteopathy and chiropractic are to be avoided. Hydrotherapy should be of value. In order to teach these patients how to go up and down stairs, it is advisable to have built a set of five or six narrow stairs with a balustrade on each side.

Retention apparatus, as a rule, is not highly beneficial because it does not strengthen the muscles. As a means of preventing contractures and deformities, it is advisable. For example, a light removable plaster cast or a brace may be used to hold a foot at right angles or a knee in extension or to support a scoliotic back. Braces aimed at correcting the lordosis are usually failures. The brace recommended by Owen of Louisville is of much value in helping the child rise from the floor. It consists of a light spine support with a piece coming off like a monkey tail. This is grasped by the patient as a support in rising.

Tendon lengthening and tenotomies should be carefully performed and only after careful study, because of the danger of losing what little tone and power the particular muscle has and the frequency of producing the opposite deformity, which might be more disabling.

One should not be misled by a temporary improvement during the first few months of treatment.

Erb and Mariano each report a cure in the case of a young girl at the time when menstrution occurred. It is possible that they saw the same case. Goldthwaite reported a cure in a man, aged 30. Timme reports two cures and four definite improvements. Levy and Rothschild had one patient who improved on pituitary extract. Funsten reported improvement in several cases.

In my series of thirty-nine cases there was marked improvement in seven, moderate improvement in three, slight improvement in three, and no demonstrable change in five; four were worse, and seventeen were lost from observation or untreated. One of the untreated patients died. Definite improvement was followed by relapse and at present a worse condition than ever in two. One patient, a boy with adiposogenital dystrophy was reduced 30 pounds (13.6 Kg.); another, a girl with the same condition, lost 25 pounds (11 Kg.). One girl was improved to the extent that at present the condition could not be diagnosed. One young man, who had used two crutches for six years, was able to walk unaided after ten weeks' treatment, and was later subjected to lengthening of both Achilles tendons, is able to walk long distances and is self supporting.

CONCLUSIONS

Pseudohypertrophic muscular paralysis is a progressive muscular dystrophy of unknown origin characterized by a pseudohypertrophy associated with marked weakness, manifested by exaggerated lumbar lordosis, waddling gait, "wasp waist," "loose shoulders," transverse smile, enlarged hard calf muscles, inability to go up and down stairs, and a classic method of rising from recumbent position; i. e., climbing up the legs. There are three definite types. The course is chronic and is subject to very little alteration. In the thirty-nine cases comprising this report, it is worthy of note that only ten were in females, and in nearly every case the patient was in very poor social circumstances.

It is my belief that the greatest progress in the understanding and treatment of this disease will come from careful studies along two lines; viz., carbohydrate-muscle metabolism and endocrinology.

The recommendations for treatment are: a diet rich in all vitamins, large doses of calcium lactate in milk,

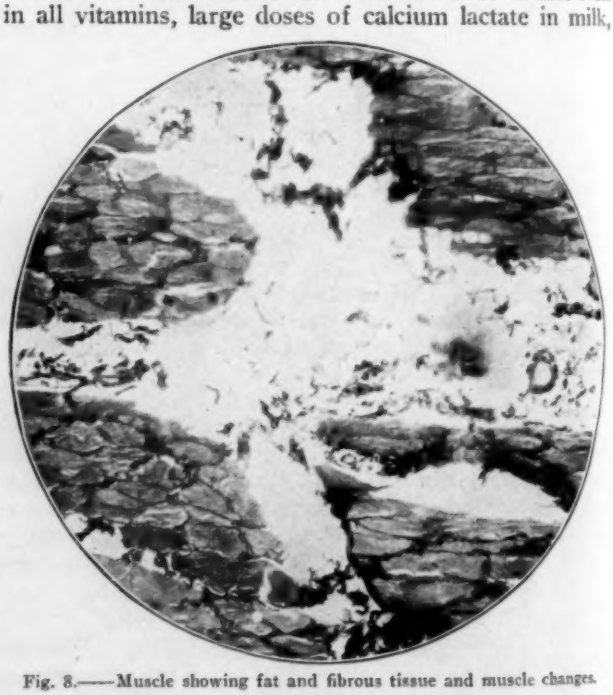


Fig. 8.—Muscle showing fat and fibrous tissue and muscle changes.

epinephrine hypodermically or hypodermic tablets dissolved under the tongue, physiotherapy, and muscle reeducation. One should not be misled by an early improvement in a case. At present it can be stated that the writer who called this condition a progressive dystrophy chose his words very well. We have here a direct challenge to the medical profession.

104 South Michigan Avenue.

Clinical Notes, Suggestions and New Instruments

BLASTOMYCOSIS OF THE BLADDER*

B. W. RHAMY, M.D., FORT WAYNE, IND.

One may find an occasional yeast cell in pus or in non-catheterized urine, but so far as I am able to ascertain there is no reported case of blastomycotic cystitis. This case occurred in a physician, aged about 47.

In October, 1922, he had a cystitis, with *Streptococcus mucosus*, which lasted about a year, clearing up under autogenous vaccine and methenamine. During the night of May 5, 1925, he had a chill with rather marked malaise, weakness, a temperature of 101 F., and a moderate night sweat toward morning. During the next day, he had frequent urination with burning and tenesmus. This continued and, May 8, he submitted himself to me for examination, supposing the trouble to be a return of the former cystitis. Urine was passed in a sterile bottle after the meatus was washed with alcohol, and examined immediately, as the patient was from out of town and wanted a report before he went home. There was 1 per cent by volume of pus. Smears and cultures were made. In neither were found any of the ordinary bacteria, but the smears stained twenty minutes after urination showed large numbers of budding yeast cells, and the cultures showed pure colonies of yeast. Thinking this might be an accident in some way, he returned, May 11, and the examination was repeated with exactly the same result. A third examination was made, May 26, after treatment with iodine and salicylates internally. The urine showed marked improvement but still contained pus and yeast This organism grew freely on glucose agar, blood agar, Loeffler blood serum and bouillon. Sugar fermentation was about the same or showed even more than from bakers' yeast. The growth was scant on plain agar and plain gelatin. This organism showed elongated yeast cells not unlike brewers' yeast, and in bouillon cultures showed filaments. No terminal spores were found. It was gram positive. Guinea-pig inoculation was negative.

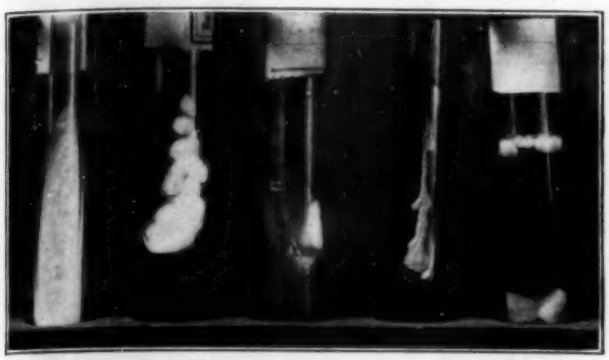


Fig. 1.—Pure cultures of yeast from urine sediment grown on Loeffler's blood serum, glucose agar, plain agar, blood agar and bouillon, May 8, 1925.

Fig. 2.—Urine sediment, showing many pus cells and budding yeast cells, May 8, 1925.

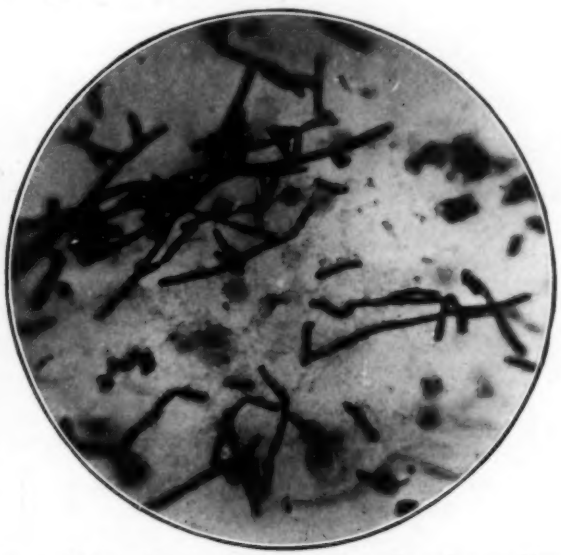


Fig. 3.—Urine sediment, showing few pus cells and yeast filaments, Dec. 23, 1925.

The patient had never had a glycosuria. Two years previously, he began eating two cakes of Fleischman's yeast each day, which was continued for about two months, after which he ate a cake about every two months. The last cake was eaten four or five weeks before the present trouble began. At the age of 13, he fell out of a haymow, landing astride a manger. He developed a stricture and had two operations and a cauterization. At the age of 15, he had bladder irrigation. Treatment of the yeast infection consisted first of iodine and salicylates internally, with improvement. Later, hexylresorcinol and methenamine were alternated. Under this treatment, improvement continued as outlined below, until only a trace of pus and a few yeast filaments remained. Neglect of treatment was followed by a relapse in September; the condition then improved rapidly under more active treatment.

Data of Urinalysis

Date	Appearance	Sediment	Bacteria	Treatment
10/ 4/22	Cloudy	Pus, 2% bulk	Streptococci	Autogenous vaccine and methenamine
2/ 2/23	Faint cloud	Pus, 0.25%	Streptococci	
9/20/23	Heavy cloud	Mucopus, 2%	Streptococci	Treatment resumed actively
4/ 6/24	Clear	None		
5/ 8/25	Marked cloud	Pus, 1%	Many yeast buds; no streptococci	Hexylresorcinol autogenous vaccine
5/11/25	Marked cloud	Pus, 1%	Many yeast buds	
6/11/25	Slight cloud	Pus, 0.5%	Many yeast cells	
6/18/25	Slight cloud	Pus, 0.25%	Moderate number of yeast cells	
8/21/25	Slight cloud	Pus; few cells	Trace of yeast	
9/21/25	Clear	Pus; occasional cell	Few threads	Treatment neglected after this
10/14/25	Slight cloud	Pus, 0.5%	Yeast buds numerous	Treatment begun again
12/23/25	Slight cloud	Pus, trace	Few yeast threads	

*Read before the Fort Wayne Medical Society, May 25, 1925.

The definite biologic relationship of such budding organisms as *Monilia, Oidium, Torula, Coccidae* and yeasts or *Saccharomyces,* have not been determined, and they are all classed under a general head of blastomycosis. However, only *Saccharomyces* and *Monilia* produce gas.

CASE REPORTS IN LITERATURE

Busse, in 1894, reported a case of abscess of the tibia, which resulted in general infection and death. Curtiss, in 1895, described multiple tumors of the hips and neck resembling myxosarcoma, the yeast was pathogenic for rats, mice and dogs. Similar cases have been described with the lesions either of the skin or the lungs, the latter usually the seat of systemic infection. Jackson reported a case of ophthalmia in 1915. Buschke found yeast pathogenic to guinea-pigs in a cervical discharge. Tokischige, in 1895, described an epidemic in Japan of blastomycosis in horses; a similar epidemic occurred in Italy. Kartulis, in Alexandria, reported 100 cases of blastomycosis of the gluteal regions from ordinary yeast (*Saccharomyces hansenii*). Kessler, in 1907, described blastomycosis of the cheek in an infant. A case of yeast meningitis with a positive blood culture was reported at the meeting of the American Society of Clinical Pathologists at Philadelphia, May 23, 1925.

HEMOPHILIA WITH VOLKMANN SYNDROME: REPORT OF CASE*

JOHN PRENTISS LORD, M.D., OMAHA

In January, 1926, a lad aged 16, consulted me about his hands and wrists, which were disabled. His history was that of a "bleeder," and he had had the usual experiences of such subjects. Slight cuts were serious and the bleeding hard to control. He had on a few occasions hemorrhage into his knees, which resulted in the usual symptoms of inflammation and disability. At the age of 3 years, the right knee was

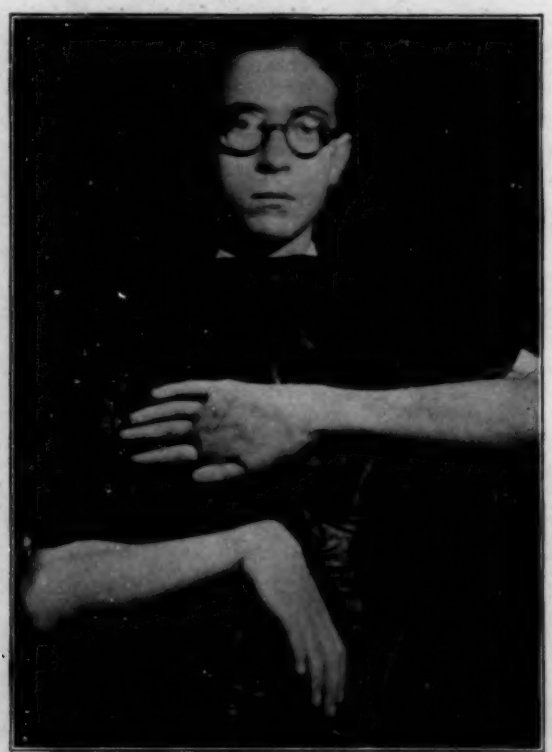


Fig. 1.—Appearance of palmar surface of left hand and forearm in patient with hemophilia with Volkmann syndrome.

diagnosed as tuberculous and a cast applied. There had been numerous subcutaneous hemorrhages in and about the right wrist six years previously. This had been untreated because all the local surgeons were away on military duty. The wrist was contracted to a right angle, although it could be extended to 45 degrees. Otherwise, there was fair function.

The extreme disability of the left wrist and forearm had caused him to seek relief. This member had been normal until October, 1924, when there had been an apparently spontaneous hemorrhage about the right elbow joint, the swelling being largely at and below the flexure of the elbow. This swelling remained for three or four weeks and resulted in the following condition: The hand was cold, smooth, glazed

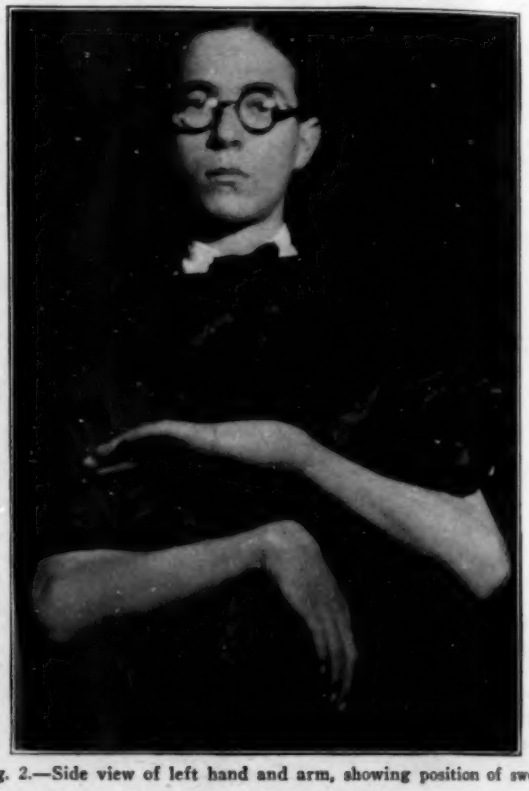


Fig. 2.—Side view of left hand and arm, showing position of swelling.

and cyanotic. The fingers were slightly flexed, shiny, stiff, ankylosed and useless, as was also the wrist. Rotation of the forearm was limited to about 5 degrees. There was some contracture of the elbow. This forearm and hand were functionless and useless. A pencil could not be held. The hand could not be used in passing food to the mouth. Sensation was impaired, and blisters were common if application of heat was not guarded. Sensation was nearly absent over the distribution of the ulnar nerve. Both palmar and dorsal surfaces of the fingers were anesthetic to the metacarpophalangeal joints. Anesthesia extended throughout the course of the ulnar nerve.

The diagnosis of ischemic paralysis was made with the assumption that the hemorrhage had been so extreme about the vessels of the elbow and under the deep fascia that the circulation had been so effectively cut off as to have produced an ischemic myositis and neuritis, of such duration and severity as to have caused the present condition. The only feature of this case that did not run true to Volkmann's paralysis and ischemic contracture was the absence of flexion contractures of the fingers and of pressure scars, which have been almost invariably present in all the patients I have previously seen. I understood this best by reminding myself that in cases produced in the usual way, the flexor muscles, being of larger bulk, receive most of the injury and, on account of there being a greater power of contracture on the flexor side, the wrist and fingers are flexed. In this case, the paralysis and contraction of the muscles were about evenly balanced.

Previous attempt at flexing the fingers and wrist had resulted in hemorrhage and the condition made worse. It was therefore decided to proceed with great gentleness and caution. Radiant heat and diathermy, the gentlest massage and active and passive motion of minimal character, were employed, which

* Read before the Western Surgical Association, Wichita, Kan., Dec. 18, 1925.

quickly improved the circulation and rendered the hand warm for most of the time.

Cock up splints were applied to both hands, great care having been observed to avoid pressure or force. Notwithstanding our precautions, hemorrhage occurred in the palm of the ischemic hand, and the support had to be abandoned, but the patient was directed to resume its careful, guarded use when possible.

The coagulation time varied with a range of from fourteen to forty minutes but, by the use of fibrinogen, it was temporarily reduced to six minutes.

A search of the literature has brought little that has been helpful in hemophila. All the therapy developed in recent years, the use of which is so helpful in emergency treatment, is acknowledged to be of short transient effect; that there is no known permanent cure is also acknowledged.

It was advised, therefore, that the home physician arrange with his druggist to have constantly on hand a supply of these agents for emergency use, to limit if possible the extent of the hemorrhage and thus to control further and more serious results.

I have presented this case because of its rarity, having found no record of a case with similar causation, and believe that ischemic myositis and neuritis-Volkmann paralysis can be produced by impairment of the circulation when neither splints nor tight dressings have been used.

Aquila Court Building.

FULL UPPER TOOTH PLATE REMOVED FROM ESOPHAGUS

G. S. McREYNOLDS, M.D., TEMPLE, TEXAS
Endoscopist, Kings Daughters Hospital

This case is of unusual interest because of the size of the foreign body and the length of time it had been tolerated in the esophagus.

A man, aged 65, who was syphilitic and an habitual user of alcohol, ate a large oyster stew, Dec. 4, 1925, and a few hours later went into a cafe and ordered two dozen fried oysters. While waiting to be served he had a severe choking spell

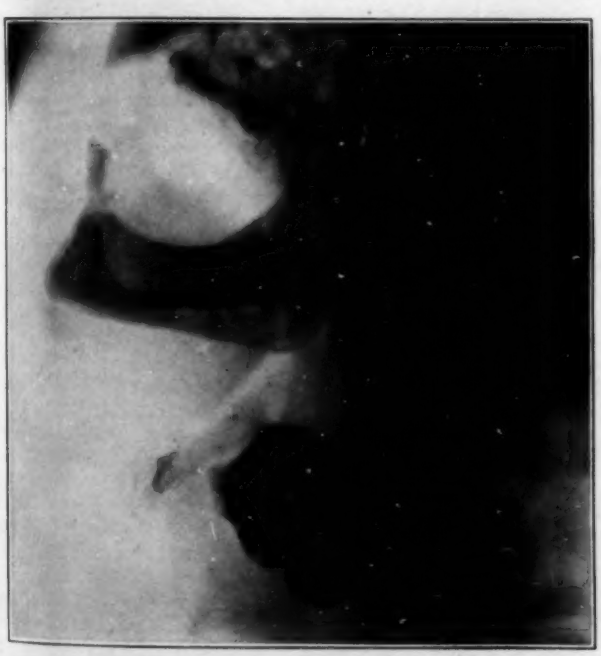


Fig. 1.—Location of foreign body.

for several minutes, when the trouble subsided; but he was unable to eat and went home. He continued to have considerable difficulty in swallowing, breathing and talking, but had no pain. A day or so later a physician made a diagnosis of possible laryngeal diphtheria and gave antitoxin, but the patient continued having difficulty in breathing, talking and swallowing, and could take only liquids.

January 5, I found him talking huskily and breathing with considerable effort. There was no cyanosis. He was still able to swallow only liquids, but thought he had been swallowing more easily the last few days. He had no pain and no fever. Examination of the throat showed some membrane on the pharyngeal wall and some irritation of the throat. He complained of a great deal of secretion forming in his throat. With the facilities at his home I could not see a foreign body. I asked him whether or not he had swallowed his teeth, and

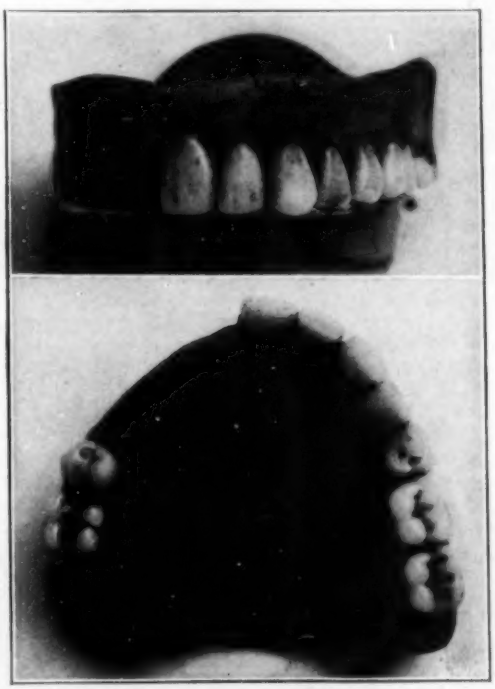


Fig. 2.—Size of plate.

he declared that he had not. His weight had dropped from 174 pounds (79 Kg.) to 144 (65 Kg.) in thirty-two days' time, but he was fairly strong and able to walk about. A culture from the throat was negative as to diphtheria; a Wassermann test of the blood was 4 plus positive.

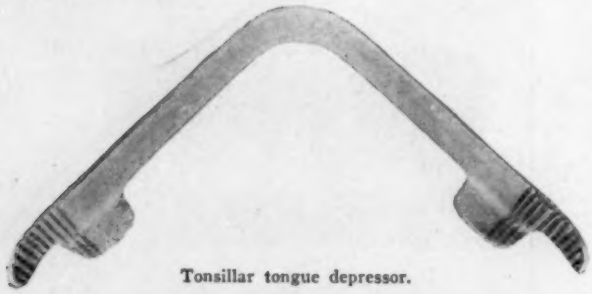
January 6, he reported at my office, where I made an examination with a laryngeal mirror and could see something white extending across the throat on a level with the top of the larynx. With my finger I felt a large, smooth substance extending all the way across the throat. A fluoroscopic and roentgenographic examination showed an enormous foreign body at the upper end of the esophagus. The patient was given one-half grain (0.03 Gm.) of morphine and an hour later the pharynx was cocainized with 10 per cent cocaine. The Jackson adult laryngoscope was introduced and brought the foreign body into view, when it was grasped with alligator forceps and brought up into the pharynx proper. I then had to grasp it with much stronger forceps with small, sharp teeth and, owing to its size and position, had to turn it and push back the pillars of the fauces with my fingers, thereupon delivering a full upper tooth plate measuring 2⅛ inches (53 mm.) in each direction. There was some pain at the time of delivery but none thereafter and there has been none since, recovery being uneventful. As shown in figure 1, the foreign body extended about 2 inches down the esophagus. Figure 2 shows the actual size of the plate. I do not know of any published report of a foreign body as large as this removed from the esophagus. The case demonstrates that a foreign body in the esophagus, regardless of its size, should be removed through the mouth rather than by an external operation.

The points of especial interest in this case are the size of the foreign body, the length of time it remained in the esophagus, thirty-three days, and the absence of pain during that time.

A RETRACTING TONSILLAR TONGUE DEPRESSOR*

T. CARROLL DAVIS, M.D., PHILADELPHIA

Tongue depressors have been made in great numbers and varieties, but none seemed quite adequate for tonsillar work. The one described here I designed about two years ago and have found it very satisfactory. It has a shoulder and notch near the tip, as shown in the illustration. The shoulder is placed between the tongue and the jaw, and the notch then allows free access to the tonsil. The ends are made for right and left, and the shoulder helps hold when that end is used as a handle.



Tonsillar tongue depressor.

It has three great advantages:

The shoulder, being placed between the jaw and the tongue, not only depresses the latter but also retracts it. This enables the operator to get a view of the lower portion of the tonsil and of the tonsillar cavity when the tonsil has been removed.

The shoulder also anchors the depressor so that it is not so likely to move out of position when an assistant is holding it, but is unable to observe it constantly while the operator's head excludes his vision.

Since the depressor is held at the side of the tongue, it does not tend to press against the epiglottis and interfere with the patient's breathing.

This depressor has been made in two sizes; one for children and the other for adults.

3128 North Broad Street.

A METHOD FOR IMMEDIATE TREATMENT OF FRACTURED PATELLA

FRANK P. CORRIGAN, M.D., CLEVELAND
Director of Surgery, St. Alexis Hospital

A part of this method was first demonstrated to me by Professor Bardenheuer of Cologne, Germany, in 1910. It consists of plaster extensions, one applied to the anterior

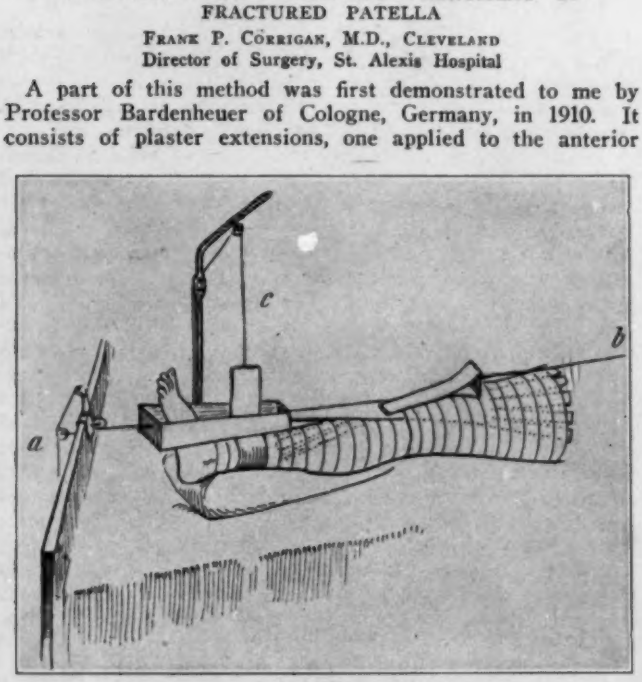


Fig. 1.—Extension method, after Bardenheuer.

part of the thigh over the quadriceps femoris group of muscles, the other applied over the anterior tibial group. These extensions pass through each other in a way devised, I believe, by Bardenheuer, and called by him "durch greifende zug," or what might be roughly translated as a "through and through pull."

The results demonstrated in the Cologne clinic had led me to adopt his method in certain cases. I have used it for a number of years with results that compare favorably with the operative treatment. Especially have I found it useful preliminary to operations and in cases in which operation was contraindicated.

During the last eighteen months I have been using another method combined with the "durch greifende zug" of Bardenheuer, which I now offer as a method of choice in the immediate treatment of fractured patella. I think we are all agreed that it is wise to wait at least a week before proceeding to the suture by open operation of a fractured patella. My own practice is to wait until eight or nine days have elapsed in the case of adults in order that the exudate and hemorrhage may be partially absorbed and until the defensive wall of nature has been well established. I feel that the danger of infection of the knee joint is greatly lessened by this delay. But, by the method here illustrated, the fracture may be reduced immediately and in many cases maintained in such good reduction that no further operation is necessary. The objection to the old method in which the extension was by weight and pulley was the enforced confinement necessary to maintain accurate and continued extension. To overcome this objection and give the patient greater freedom of motion and at the same time also to maintain continuous extension which will tend to reduction and to maintenance in apposition of the broken fragments, I have devised the method here illustrated.

Fig. 2.—Fractured patella treated by through and through pull with cast applied.

The adhesive plaster is first applied above and below the knee, and the lower plaster strips as they converge pass through a slotlike opening in the converging plaster extension which has been applied above over the quadriceps femoris. The separation, in transverse fracture of the patella, is due in great part to the retraction of the quadriceps and in part also to distention of the joint by blood and exudate. The lower fragment is not much displaced but must be held in position so that the upper fragment can be pulled firmly against it and thus favor bony union. The presence of blood and exudate in the joint is the contraindication to early operation. The gradual shortening of the muscles, increasing the interval between the fragments, is reason enough for instituting treatment as early as possible. The treatment here offered seems to me to meet these indications.

After adhesive plasters have been applied and allowed to set well on the skin of the injured leg, a flattened cylinder of cardboard is placed over the knee, the ends curving up in like a cow's horns, above and below; a pad about 4 inches in circumference is placed on top of it immediately over the patella. A plaster cast is then applied to the leg in such a way that the ends of the flattened cardboard cylinder are left outside. The pad causes the plaster to harden in the form of a dome over the patellar region, thus rendering the fracture region accessible for observation. The cardboard cylinder and pad are both removed when the cast has hardened. The cardboard cylinder, curved in a semicircle, leaves slotlike openings above and below the patella, as shown in figure 2. This leaves the region of the fracture readily accessible and permits adjustment of the extension apparatus which has been previously applied. Incorporated into the cast above and below the knee are two hooks or rings; these can be fixed in place by wire buried in the plaster. I have used,

* From the Nose and Throat Department of the Samaritan Hospital.

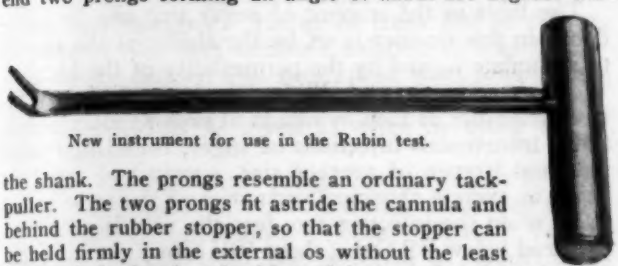
in some cases, hooks that have been soldered to flexible sheet brass or aluminum plates. Picture wire is securely attached to the ends of the extending adhesive plasters. The other ends of the wires are secured to turnbuckles and the extension applied above and below by attaching to the hooks and screwing up the turnbuckles to required tension as shown in the illustration (fig. 2).

1110 Euclid Avenue.

A NEW INSTRUMENT FOR USE IN THE RUBIN TEST *

J. ARTHUR YORK, M.D., BALTIMORE

This instrument is composed of a handle that fits the hand comfortably, and a long, slender shank, which has at its distal end two prongs forming an angle of about 100 degrees with



New instrument for use in the Rubin test.

the shank. The prongs resemble an ordinary tack-puller. The two prongs fit astride the cannula and behind the rubber stopper, so that the stopper can be held firmly in the external os without the least tiring of the hand and without injury to the stopper, which does occur when a clamp is used.

This instrument has been received with favor in the gynecologic departments of the Johns Hopkins Hospital, Union Memorial Hospital, and Hospital for the Women of Maryland.

VEGETABLE MARROW AS A CAUSE OF POSITIVE BENZIDINE TESTS IN THE STOOLS OF DIABETIC PATIENTS †

JOSEPH C. MASSEE, M.D., BOSTON

In the routine laboratory examinations at the Peter Bent Brigham Hospital, it was observed that a large number of diabetic patients in whom there was no reason to suspect a pathologic condition of the gastro-intestinal tract showed a positive benzidine test for occult blood in the feces. It was believed that some other factor than the meat in the diabetic diet might be the cause of this positive reaction, since a larger proportion of diabetic patients than other patients on diets containing meat seemed to give a positive test. Accordingly, various articles in the diets commonly given to diabetic patients were tested both by the benzidine and by the guaiac test. In this way it was found that in addition to the meats a certain vegetable, English marrow, gave a positive benzidine and guaiac test. This marrow has been largely used in diabetic diets because of its bulk and low calory content. Other vegetables, such as spinach, which might be expected to give a positive test because of their chlorophyl content, failed to do so by the tests and technic used.

To ascertain whether marrow was actually the cause of a positive benzidine test in the stools, several diabetic patients were placed on a diabetic diet without meat but containing marrow. The benzidine reaction of the feces, though not so strong as when both meat and vegetable marrow were given, persisted in being usually positive as long as vegetable marrow was given. A patient with severe diabetes was kept on a meat-free and marrow-free diet for nine days with only a single positive benzidine test. After having vegetable marrow added to the meat-free diet, his stools showed positive tests in four out of the next six days. When meat was added to the diet, the benzidine reaction promptly became much stronger and remained so. Thus it seems that marrow may really give a false positive test for occult blood in the feces, even when the patient is on a meat-free diet, and when the patient has a diet containing meat, it is an additional factor in producing a positive benzidine test in the stool.

721 Huntington Avenue.

* From the Hospital for the Women of Maryland.
† From the Medical Clinic of the Peter Bent Brigham Hospital.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 325)

INDICATIONS FOR INTRAVENOUS THERAPY

1. *To Increase Amount of Circulating Fluid.*—The most obvious indication for intravenous injection is to supply a marked deficiency in the circulating fluid. When this deficiency includes all or some of the cellular ingredients of the blood, as after severe hemorrhage, in pernicious anemia or in purpura, there is nothing that equals blood transfusion, the details of which can hardly be discussed here.

The injection of physiologic sodium chloride solution, though quite generally recommended by clinicians for producing at any rate temporary and symptomatic improvement and to be employed when blood transfusion is impossible, has not been able to bear the criterion of experimental investigation. "Streams of blood and hecatombs of animals" [100] have sealed the verdict that, when just enough blood has been withdrawn to be surely fatal, infusion of physiologic sodium chloride solution will not save the victim. Thus, rabbits with blood losses exceeding 3 per cent died with and without salt infusion; with blood losses below 3 per cent, the animals generally recovered without infusions.

Because of this unsatisfactory status of salt solution, numerous modifications of it have been experimented with. The one that has probably the strongest backing is the use of 7 per cent acacia salt solution originated by Bayliss [101] during the World War. By means of it, it is asserted, serious results can be prevented even when the blood corpuscles have been diminished to half their number, a reduction otherwise fatal. As acacia is a colloid and the blood vessels are impermeable to colloids, it attracts or retains water in the blood. Doubts have, however, been raised regarding the safety of this procedure, among others by Lee,[102] who reviews the literature opposing this measure and reports two cases of unexpectedly sudden death after acacia-saline infusion. Hanzlik and his collaborators also find acacia dangerous on intravenous injection. It is doubtful, therefore, that this solution can be recommended for general use.

The best results from the infusion of physiologic sodium chloride solution are secured when the system has sustained a great loss of fluid from excessive vomiting and purging, as in Asiatic cholera, in dysentery and in gastro-enteritis of infants. In these conditions the administration of the fluid should be intravenous only when the urgency of the relief required renders subcutaneous infusion not sufficiently rapid in its effects.

* This is the thirty-second of a series of articles on "The Technic of Medication." When completed, the articles will be assembled in book form.

100. Gumprecht, F.: Die Technic der speciellen Therapie, Gustav Fischer, 1903.

101. Bayliss, W. M.: Acacia for Transfusion, J. A. M. A. 78: 1885 (June 17) 1922.

102. Lee, R. V. A.: Sudden Death in Two Patients Following Intravenous Injections of Acacia, J. A. M. A. 79: 726 (Aug. 26) 1922.

In these conditions, the indication exists for the use of liberal quantities (for adults 1 liter or even more), repeated sufficiently often to maintain the unfortunately somewhat transient improvement. When saline solution is used for this purpose, the addition of colloid would be undesirable, as we aim here to antagonize tissue thirst rather than low blood pressure; and 0.6 or 0.7 per cent solution is preferable to 0.9 per cent, as more thirst quenching. Banerji [103] advocates determination of the specific gravity of the blood as the best guide to the use of saline infusion. He adds 6.25 cc. of a saturated solution of magnesium sulphate to 25 cc. of water, so as to obtain a solution with a specific gravity of 1.060 at body temperature. If a drop of blood sinks in such solution, saline infusion is demanded. If the drop sinks slowly, he advises the use of about a liter; if rapidly, about 2 liters, if very rapidly, like lead, as much as 3 liters.

Of late the advocacy of using sugar solution instead of salt solution has become more and more insistent. Salt is not only useless to the system but a definite burden to it and injurious to abnormally sensitive kidney epithelium, as in cases of cholera; while sugar is not only harmless but also supplies a definite amount of nourishment. Two liters of isotonic dextrose solution, which is approximately 4.5 per cent (more accurately 4.76 per cent), represents about 260 calories. Hence, Strauss [104] urges the administration of this solution as the best routine procedure in cholera. Litchfield [105] concludes that dextrose solution is preferable, when there is danger of acidosis and in all cases of inanition, as well as in toxic states. However, the injection of a considerable amount of such a solution may cause chill, fever and sweat. Indeed, isotonic sugar solution has been advocated by Audain and Masmontail [106] for the induction of such reaction in the treatment of septicemia. Williams and Swett [107] ascribe these reactions to the fact that dextrose solutions become acid on sterilization; and they report that, if the p_H of the solution is brought to approximately 7.4 by means of potassium phosphate buffer, the liability to such reactions is much diminished. Stoddard [108] agrees that the addition of buffer solution lessens the liability to reactions, but doubts that enough acid is introduced to account for these on the basis of acidosis. Pendleton [109] suggests that the agglutination of the red blood corpuscles produced by 5 and 10 per cent dextrose solutions is responsible for these reactions. He finds that this agglutination is greatly diminished by using definitely hypertonic (40 per cent) solutions of dextrose; and that it may be prevented by the addition of sodium chloride (from 0.1 to 0.2 per cent), dibasic potassium phosphate (from 0.1 to 0.2 per cent), by rendering the solution slightly alkaline (two hundred and fiftieth normal sodium hydroxide), or by mixing the dextrose solution with an equal or greater volume of blood. Very slow injection of the solution would in part at least accomplish the result clinically. Sucrose or glycerin solution produces similar agglutination.

2. *Intravenous Nutrition.*—The only food that can well be administered intravenously is sugar. Fat is out of the question because of the danger of fat embolism, and foreign protein or its split products because of their toxic action when administered parenterally, though amino-acid mixtures have been shown to be tolerated and assimilated by animals on intravenous injection by Henriques and Anderson.[110] Thus far, however, these have not been used in man. Among the sugars, the one most generally employed for this purpose is dextrose, as it is the sugar normally contained in the blood. Dextrose solution can be administered in concentrated form, as 30 per cent solution, and in considerable quantity, provided it is given slowly enough.

The limit to the amount of sugar that can be introduced in this manner is set by the ability of the system to assimilate it, and by the permeability of the kidneys. Woodyatt, Sansum and Wilder,[111] who studied the dextrose tolerance of men by means of prolonged accurately timed intravenous injections of sugar, found that adult men and women of average size, weight and nutrition begin to excrete abnormal quantities of dextrose in the urine when the injection rate into the vein is above 0.8 Gm. and below 0.9 Gm. (about 0.85 Gm.) per kilogram of body weight hourly. From this it will be seen that a person weighing 70 Kg. would tolerate up to 63 Gm. of dextrose, yielding approximately 252 calories, per hour. This means that, in giving 10 per cent dextrose solution intravenously, the flow should be so arranged as to consume at least an hour's time in the introduction of 500 cc. If it is introduced much more rapidly, a considerable portion of it is apt to be excreted in the urine. If such injection were continued throughout the day, 6,048 calories would be introduced in the course of the twenty-four hours, which would be double the caloric income required by the resting person. Hence, it may be asserted that intravenous nutrition with dextrose is clinically feasible. Marriott,[112] as well as Porter, Morris and Meyer,[113] use in severe nutritional disorders, when need for food is imperative, the intravenous injection of dextrose solution as a routine, even in those cases in which some sugar appears in the urine.

Aside from its importance as life-sustaining fuel, the administration of carbohydrate may be of life-saving significance in conditions associated with acidosis and a tendency to fatty degeneration. The researches of Opie and Alford,[114] Graham [115] and Simonds [116] have demonstrated experimentally the protective value of carbohydrate in certain types of poisoning believed to be associated with increased protein catabolism, such as poisoning by chloroform and phosphorus. Thus, in Simonds' experiments, the dogs that were given only phosphorus became exceedingly ill and several died as a result of the poisoning, while the animals that were given an equivalent amount of phosphorus with feeding of sugar showed little or no evidence of illness clinically and were playful. The livers of the phosphorus dogs showed absence of glycogen, marked

103. Banerji, D. N.: Specific Gravity of Blood in Cholera, Calcutta M. J. **16**: 459 (June) 1922.

104. Strauss, H.: Zuckerinfusionen bei Cholera, Therap. d. Gegenw. **56**: 370 (Oct.) 1915.

105. Litchfield, Lawrence: The Abuse of Normal Salt Solution, J. A. M. A. **63**: 307 (July 25) 1914.

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107. Williams, J. R., and Swett, Madeleine: Hydrogen Ion Concentration Studies, J. A. M. A. **78**: 1024 (April 18) 1922.

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110. Henriques, V., and Anderson, A. C.: Ztschr. f. physiol. Chem. **92**: 194, 1914. Intravenous Nutrition, editorial, J. A. M. A. **62**: 385 (Jan. 31) 1914; New Experiences with Intravenous Nutrition, ibid. **63**: 1859 (Nov. 21) 1914.

111. Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: Prolonged and Accurately Timed Intravenous Injections of Sugar, J. A. M. A. **65**: 2067 (Dec. 11) 1915.

112. Marriott, W. M.: The Artificial Feeding of Athreptic Infants, J. A. M. A. **73**: 1173 (Oct. 10) 1919.

113. Porter, L.; Morris, G. B., and Meyer, K. F.: Certain Nutritional Disorders Associated with a Putrefactive Intestinal Flora, Am. J. Dis. Child. **18**: 254 (Oct.) 1919.

114. Opie, E. L., and Alford, L. B.: The Influence of Diet on Hepatic Necrosis and Toxicity of Chloroform, J. A. M. A. **62**: 895 (March 21) 1914; J. Exper. Med. **21**: 1, 1915.

115. Graham, E. A.: J. Exper. Med. **21**: 185, 1915.

116. Simonds, J. P.: J. Exper. Med. **28**: 663 (Dec.) 1918.

increase in visible fat, and necrosis. The livers of the phosphorus-sugar dogs were free from necrosis and showed glycogen and much less visible fat. Acidosis, as is well known, is the immediate result of the oxidation of fatty acid in the absence of a sufficient proportion of oxidizing glucose. The ration required appears to be that F. A.: G. shall not exceed 1.5. Therefore, each gram of glucose not only provides 4 calories but also makes possible a normal oxidation of 1.5 Gm. of higher fatty acid. This fat is supplied, in starvation, by the body itself; and, if glucose is not furnished, with the development of acidosis. From a clinical standpoint, Valk [117] among others advocates the use of dextrose infusions in postoperative acidosis, with persistent nausea and vomiting. He gives from 250 to 500 cc. of 10 to 20 per cent dextrose solution in freshly distilled water, titrated and neutralized with sodium carbonate, filtered and autoclaved on three successive days. This solution can be given as often as every six to twelve hours.

In the hyperemesis of pregnancy, as well as in other forms of hyperemesis, dextrose infusion has been found of life-saving importance. Thus, Titus [118] reports favorable results from the injection of from 50 to 75 Gm. of dextrose in hypertonic solution (25 per cent), which he finds acts more favorably than weak solutions.

Intravenous dextrose infusion, in conjunction with insulin administration, has become of the greatest importance in the grave acidotic crises of diabetes mellitus. While there can be no question of the necessity of the combined use of insulin and carbohydrate in this condition, doubt may be entertained as to the advantage of this combination in nondiabetic acidosis, which has been advocated by a number of clinicians. Titus, for instance, has seen no advantage from the combination in hyperemesis gravidarum.

3. *Intravenous Osmotherapy.*—Under the heading "osmotherapy" might be included all those remedies, hypotonic as well as hypertonic, that act by means of the osmotic changes produced. As, however, the most striking results are occasioned by the intravenous administration of hypertonic solutions, it is their injection that is referred to under this heading. As osmotic changes are in proportion to the concentration of the solution, they are observable only with relatively harmless bodies, such as salt, urea and, most especially, dextrose, of which as high a concentration as 50 per cent may safely be employed in quantities up to 100 cc. and even more. The general tendency of the results produced by these osmotic changes is identical no matter what substance is employed; still, the specific action of some of these reinforces and emphasizes certain changes produced by the osmotic action. Thus, there is a tendency to increase the clotting power of the blood from all osmotherapeutic agents; but this is most marked with calcium.

It is remarkable how slight a change in the osmotic tension of the blood is produced by the slow injection of hypertonic solutions in therapeutic quantities. This does not mean that the osmotic tension of the blood cannot be changed, but that the tissues, most especially the nervous system, are so intolerant of osmotic changes in the blood that a sufficiently rapid injection or a slow injection of excessive quantity means alarming symptoms and even death. The reason for this absence of demonstrable change in osmotic tension of the blood from therapeutic osmotherapy lies in an elaborate mechanism for the protection of isotony of the parenchyma, on the one hand, and of the blood, on the other, the added material being temporarily stored in the mesenchyma, which is most especially affected by it. At the same time, tissue fluid enters the blood to lower its osmotic tension. The added material is gradually reabsorbed into the blood, as the emunctories are relieving themselves of the quantity stored in them by elimination into their secretion. This stream of tissue fluid into and out of the blood explains some of the chief effects and possible therapeutic uses of osmotherapy.

The stream into the blood is responsible for an increased absorption from the alimentary tract and elsewhere, as well as a lessening of secretions. Attempts have been made to employ the increase of absorption therapeutically in the exudative forms of eye disease, as well as in suppuration of the accessory sinuses of the nose. In the latter condition, transient diminution of headache has been described following infusion of hypertonic dextrose solution. Sansum [119] has obtained decided lowering of the intra-ocular tension in cases of glaucoma by prolonged intravenous injection of hypertonic glucose solutions. Most marked seems to be the effect of osmotherapy in reducing intracranial pressure. Weed and McKibben [120] have pointed out that it is possible to diminish the bulk of the brain by the injection of a 35 per cent solution of sodium chloride into the blood stream, and that this is accompanied by a reduction in the cerebrospinal fluid pressure. Sachs, Belcher and Malone,[121] as well as Ebaugh and Stevenson,[122] have reported on the use of strong salt solution in the control of excessive intracranial tension and for the relief of "tension headaches," such as may occur in persons suffering from cerebral tumor. This diminution of tension is likewise useful as a preliminary to operation on the brain in such cases, as it lessens the tendency to cerebral hernia on opening of the meninges. The lowering of tension is usually preceded, as has been shown by Weed and Hughson,[123] by a sharp rise. This is followed by a prolonged and profound fall in cerebrospinal fluid pressure that may last for hours. The reason for the lowering in pressure is partly absorption of fluid into the blood, but chiefly a diminution in the formation of cerebrospinal fluid.

Haden [124] advocates the use of dextrose rather than of salt solution in cases of meningitis and other conditions of excessive intracranial pressure. He infuses a 25 per cent solution of dextrose every twelve hours, from the onset of the disease until there is no longer any evidence of increased intracranial pressure. These injections are given in addition to the specific treatment and lumbar puncture with drainage of the spinal fluid. If immune serum is given intravenously, the dextrose solution may be given at the same time. The injection should be made slowly, so that one hour is consumed in administering 250 cc. of a 25 per cent solution. In aseptic meningitis, such as that following intraspinal injections, intravenous osmotherapy offers a prospect of aid.

117. Valk, A. De T.: Virginia M. Monthly **48**: 405 (Oct.) 1921.

118. Titus, Paul: Hyperemesis Gravidarum, J. A. M. A. **85**: 488 (Aug. 15) 1925.

119. Sansum, W. D.: Glucose Injections, J. A. M. A. **68**: 1885 (June 23) 1917.

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123. Weed, L. H., and Hughson, W.: Am. J. Physiol. **58**: 53, 85, 101 (Nov.) 1921.

124. Haden, R. L.: Therapeutic Application of the Alteration of Brain Volume, J. A. M. A. **73**: 983 (Sept. 27) 1919.

Elsewhere the diminution of secretory activity from hypertonic infusion shows itself in the dryness of the mouth and thirst, in a definitely demonstrable lessening in the quantity of gastric secretion, as well as of its acidity. These effects are at least as marked as those resulting from atropine. From a therapeutic standpoint, the use of this inhibition of secretion has been suggested in cases of mastitis to check milk secretion. Stejskal [125] reports that he obtained good results in three cases of this kind with 20 cc. of 50 per cent solution of dextrose, as well as with from 10 to 20 cc. of 10 per cent calcium chloride solution. He also believes that a definite improvement can be obtained in many cases of hyperthyroidism from a course of hypertonic injections. Thus, ten injections of 20 cc. of 50 per cent dextrose solution given in the course of two weeks have produced very definite improvement in two cases of exophthalmic goiter. Goetsch [126] reports favorable results in the combating of thyroid postoperative acidosis, which is liable to develop in the first twenty-four hours, from the slow intravenous injection of glucose solution. He advises its administration as soon as acidosis (indicated by acetonuria) appears, as this injection acts by antagonizing acidosis. He finds that it controls the symptoms and makes the postoperative course much more comfortable and safe. An anhydrotic action of hypertonic injections, especially in the night sweats of tuberculosis, has been noted by many observers, especially with calcium. Meyer-Bisch,[127] who reports that the intravenous injection of 2 cc. of a 20 per cent solution of sugar or of sodium chloride (but not of sodium bicarbonate) often produces a definite inhibitory influence on the night sweat in many cases of tuberculosis, believes that an explanation of this action based on osmotic changes cannot apply, as the quantities employed are too small and the effect often lasts for days and weeks. It is suggested that "plasma activation" may have a share in the effect.

Diuretic action is not a marked property of these injections. The tendency to increase in the quantity of urine, along with the elimination of the added material, is counteracted by the general inhibition of secretory action. The diuretic tendency is greater with sodium sulphate, from 10 to 20 per cent solution, in quantities of 20 cc.; urea, 20 cc. of 20 per cent solution, and calcium chloride, from 10 to 20 cc. of 10 per cent solution. These, combined with a salt poor diet, will favor a lessening of edema. However, even under these conditions the profuse diuresis, such as is obtained from the purine bodies, is not to be looked for.

Büdingen [128] believed that glucose could stimulate the power of the heart muscle when given in higher than normal concentrations. After peroral administration, the necessary change in sugar concentration does not occur, as the liver retains the excess glycogen. He considers 20 per cent dextrose infusion a valuable adjuvant to digitalis administration, especially in myocarditis. Korbsch [129] employed, in the treatment of heart disease with edema, 50 per cent dextrose solution, in a daily dose of 20 cc. and more, with alleged favorable results. Klewitz and Kirchheim [130] subjected Büdingen's suggestion to experimental and clinical tests. They found that perfusing the isolated rabbit's heart with Ringer's or Locke's solution, to which 30 per cent dextrose had been added, increased the height of contractions and improved the coronary circulation. This effect starts almost immediately and continues usually for a few minutes. It was especially noticeable when the heart had commenced to weaken. When, however, the authors applied the same technic to the heart of animals poisoned with phosphorus, they were unable to obtain any improvement in the cardiac action, even when the change in the heart muscle was so slight as not to be recognizable on microscopic examination. The clinical experiments of these authors with the intravenous injection of 30 per cent dextrose solution in cases of angina pectoris and anginoid conditions, as well as in decompensated valvular and myocardial cases, did not produce very satisfactory results. The administration of 200 cc. of such solution was actually dangerous and led to death from cardiac insufficiency in a case of myocardial degeneration almost immediately after the infusion. Even the injection of from 30 to 50 cc. produced occasional disagreeable and sometimes even threatening results: chill and high fever, marked distress and in one case even sudden cessation of the heart beat and the appearance of pulmonary edema. While objective improvement was not demonstrable in the various cases, some of the patients expressed themselves as experiencing transient lessening of the sensation of oppression and a quieting of the heart as the result of the treatment. However, the results are so moderate as to suggest a lack of clinical value, which might be explained by the lack of effect of dextrose on even the slightly degenerated heart of rabbits poisoned with phosphorus. On the other hand, Edmunds and Cooper,[131] experimenting on dogs whose heart had been poisoned with diphtheria toxin, found that dextrose was the most satisfactory remedy in this condition. If 10 per cent dextrose solution could be gotten into the circulation before the heart stopped, they never lost a single animal. After they had secured an increase in blood pressure by the use of dextrose, the improvement was maintained by digitalis, epinephrine or pituitary.

Blood pressure is not raised by hypertonic infusions. Sugar solutions produce, however, a dilatation of the capillaries, whereby the venous pressure is raised. It has been found four times higher than at the beginning. The pulse pressure is also increased. Various organs, the extremities, and even the brain and intestines have been shown to be increased in size through this vasodilatation. The heart is not primarily affected; but there is a considerable increase in the amount of work it does, caused by the lessening in the resistance in the capillaries. The increase in intracapillary pressure is accompanied by an increased production of lymph.

The first capillary territory affected by hypertonic infusion is that of the lungs; and one would expect that the changes produced by intravenous osmotherapy would be most prominent here. This, indeed, seems to be the case. Stejskal [125] reports a favorable influence on pulmonary edema of inflammatory as well as of transudative nature, and his observations have been confirmed by others. Favorable influence has likewise been exerted on pneumonia, catarrhal as well as croupous, when treatment is administered in the early stages. In pleurisy likewise, especially in the serous form, rapid

125. Stejskal, Karl: Grundlagen der Osmotherapie, 1922.
126. Goetsch, Emil: Some Factors of Safety in the Preoperative and Postoperative Treatment of Goiter, abstr. J. A. M. A. **78**: 1565 (May 20) 1922.
127. Meyer-Bisch, Robert: Klin. Wchnschr. **1**: 1879 (Sept. 16) 1922.
128. Büdingen: Deutsches Arch. f. klin. Med. **114**: 534-579, 1914.
129. Korbsch: Deutsch. med. Wchnschr. **47**: 332 (March 24) 1921.
130. Klewitz, Felix; and Kirchheim, Rudolph: Klin. Wchnschr. **1**: 1397 (July 8) 1922.
131. Edmunds, C. W., and Cooper, R. J.: Correlation Between Pharmacology and Pathology of Diphtheritic Heart, abstr., J. A. M. A. **84**: 1596 (May 23) 1925.

reduction of fluid has been noted from hypertonic infusion following puncture. A diminution in bronchial secretion is probably, in part, the reason for the alleged benefit secured by hypertonic calcium chloride infusion in tuberculosis. Litchfield,[132] John,[133] and Wells and Blankinship[134] report favorable results from the use of large quantities (from 250 to 500 cc.) of hypertonic (10 to 25 per cent) sugar solutions in infectious diseases, chiefly in pneumonia. Baradulin[135] recommends such injections in sepsis. The manner in which these therapeutic effects are produced has not yet been sufficiently determined.

Opitz[136] reports a shortening of the bleeding time, probably due to the washing into the blood stream of thrombokinase-containing tissue fluid, resulting from the intravenous injection in children of 50 Gm. of dextrose in 50 per cent solution, approximately 1.75 Gm. per kilogram of body weight. In nearly every case, chill and fever sometimes of considerable degree with severe headache was produced by these injections. No clinical benefit was noticable from this treatment in any one of the cases studied (pericarditis, asthma, influenza, bronchiectasis). As a result of clinical experience, Lowy[137] considers glucose infusion of little value in internal hemorrhages, excepting perhaps in intestinal hemorrhage, in which the desired result seems to be obtained in a few cases.

Increasing the effect of various other medicaments, such as digitalis and morphine, seems to be a general property of hpyertonic infusions. This is probably due to improved absorption from the intestine or skin and to the tissue currents set up by the osmotic disturbance. Possibly in case of quinine when used in the treatment of malaria, this effect might be undesirable, as we aim at a maximum effect on blood and minimum action on the tissues.

Most important, if confirmed, would be the observations made regarding improved action from arsphenamine when combined with hypertonic infusion. Foley[138] has shown that so great is the upset in the normal relationship of the spinal fluid formation that, shortly after a hypertonic solution enters the blood stream, a complete reversal of the flow of cerebrospinal fluid occurs, even to the extent of intraventricular absorption of fluid through the choroid and ependyma, instead of its secretion from them. The restoration of the spinal fluid from the blood stream begins about the sixth hour after 100 cc. of a 15 per cent saline solution has been injected intravenously. In view of these findings, Corbus, O'Conor, Lincoln and Gardner[139] employed preliminary hypertonic saline infusion in conjunction with neo-arsphenamine injection with the hope of increasing the elimination of arsenic into the cerebrospinal fluid. They believed that, if the arsenical is injected just at the time when the increased restorative formation of cerebrospinal fluid is taking place, a much larger quantity of arsenic is carried into the subarachnoid spaces with the fluid. Six hours after 100 cc. of hypertonic saline solution (15 per cent), warmed to body temperature, has been given intravenously by the gravity method, 0.9 Gm. of neo-arsphenamine was given intravenously. In one or two hours, lumbar puncture was performed and from 10 to 15 cc. of fluid withdrawn. Nourishment was given four hours after the neo-arsphenamine injection, none before. All the twenty-eight patients treated according to this plan showed definite subarachnoid involvement. Some of them obtained their first negative serologic findings following this form of therapy. Arsenic was found in the spinal fluid in all but two patients (93 per cent). The amount of arsenic varied from a slight trace to 0.01 Gm. per cubic centimeter. The authors therefore conclude that the ideal time for intravenous injection of remedial agents is during the period of increased fluid formation by the choroid plexus and perivascular spaces. Arsenic penetration following this method is as constant as, or better than, after any other method that has been suggested up to the present.

Scholtz, Richter and Steinberg[140] have a different view of the reason for improved clinical results from a similar combined treatment. They believe that dextrose injections in syphilis exert a stimulating effect on the proliferation of spirochetes, which in consequence become more susceptible to arsphenamine. Cheinisse,[141] reviewing some recent reports on intravenous injection of hypertonic dextrose solution either preceding or accompanying arsphenamine, emphasizes the point that this association wards off shock and some of the other untoward by-effects of arsphenamine treatment.

Scholtz, Richter and Steinberg studied the question whether similar effects might not be obtained in gonorrhea. They found indeed that, after intravenous injection of 30 cc. of 50 per cent dextrose solution, there occurred a transient increase in the proliferation of the gonococcus, and that the organisms were now more sensitive to the influence of bactericides. They also considered such injections an excellent provocative measure. As a result of experiments with eighty-three patients, they arrive at the conclusion that, by means of this combined therapy, gonorrhea can be cured in about one-half the time required with purely local therapy. The percentage of cures after two weeks of combined therapy was about equal to the results of four weeks of local treatment. In complicated cases of gonorrhea, especially in prostatitis, the results were less favorable. The dextrose was generally injected every other day during the first week and every third day during the second week. For local treatment, mild silver protein was used in increasing strengths from 0.5 to 3 per cent. It is considered important to employ such an injection very soon after each dextrose injection. Under this treatment the gonococci disappear nearly always after the second injection and sometimes after the first; i. e., from three to six hours after beginning the treatment, and remain absent. The authors believe that probably many other intravenously injected substances have a similar mode of action.

(To be continued)

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Unit of Conduction.—The vertebrate spinal cord is a structure of such extreme complexity that it is well nigh impossible from a study of its reactions to decide whether we must consider the neuron as the unit of conduction or whether we must attribute a capacity for conduction to its constituent neurofibrils.—Tiegs, O. W.—*Australian J. Exper. Biol. & M. Sc.*

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SATURDAY, AUGUST 7, 1926

A DEFENSIVE MECHANISM IN THE BODY

The discovery of various bacteria specifically concerned with certain diseases, and the demonstration of the etiologic rôles of micro-organisms in the development of pathologic conditions, was logically followed by attempts to secure germicidal effects in an attack on the invaders. Particularly in the case of suppurating wounds, antisepsis found abundant opportunity for valuable application. It represented Lister's plan as an outcome of the pioneer researches of Pasteur. Antisepsis has not lost its significance even today; but medicine no longer puts its reliance solely on the possible protective potency of germicidal drugs, useful though these may be in many emergencies. We have learned that in the fight against bacteria in the organism there are potent agencies that the body itself may bring into play. Resistance to disease of microbic origin is often endogenous in character. In some instances species resistance, for example, may be so perfect that it amounts to absolute immunity against certain bacteria. Sometimes immunity of varying effectiveness is gradually acquired. The protective forces here referred to are not like the man-made antiseptics—mercuric chloride, phenol, iodine or the like—but are classed grossly as "antibodies," pending the development of more adequate chemical information about the "immune substances" and "lytic principles." Chemistry has not yet solved the mysteries of the empiric discoveries of antibacterial immunization.

The fate of bacteria within an infected body is further rendered uncertain by an added protective mechanism represented in cell ingestion, or phagocytosis. In the defense of the body against invasion by bacteria and other foreign substances there may be, first, an active motion of special types of cells toward the point of attack and, secondly, an act of ingestion of the noxious material. Thus, both fluids and cells in the body serve to avert harm, to provide inhibition, destruction or complete immunity toward objectionable invasion. The glamor of earlier successes of chemical antiseptic procedures in practical medicine dimmed the contribution of the less spectacular bodily modes of resistance. Only in recent years has their significance been observed in a better light and larger reliance placed on them. Students of the subject are earnestly considering whether it would not be therapeutically profitable to devote more energy to the promotion of processes for supporting or augmenting the natural defenses of the body.

The significance of these factors is stressed in connection with such problems as are presented by puerperal infection. It is agreed that the direct introduction of pyogenic bacteria into the genitalia by means of hands or instruments represents an important source of infection; but the question of autoinfection as well as of nature's mode of protecting the puerperal woman still remains debated. Mere prophylaxis has not yet eliminated the danger in everyday experience. An obstetrician has remarked that if we take into account the paths by which bacteria may be absorbed from the surface of the slight or severe cervical lacerations that occur in almost every labor, we may say that they travel through the cervical wall by way of the lymphatic vessels or the lymph spaces, as the lymphatics draining the upper part of the vagina and cervix unite at the lateral margin of the latter and, following the course of the vessels, pass into the dense connective tissue of the parametrium. There, according to Hofbauer's[1] studies at Johns Hopkins University, occurs a remarkable development of phagocytic tissue within the tissue spaces of the base of the broad ligament, which is particularly accentuated under the stress of prolonged labor—a period which, in his words, presents the high-water mark of macrophage activity. In explanation of the local tissue immunity, Hofbauer has found that during pregnancy a phagocytic tissue, consisting of monocytes and clasmatocytes, makes its appearance in the base of the broad ligament, and is intensified under the stress of prolonged labor, but particularly by the existence of infection. The development of this tissue from resting-wandering cells and adventitial cells can be demonstrated. One must agree with the investigator that the presence of this phagocytic tissue in the parametrium must be regarded as a prophylactic biologic reaction and as a marked protection against infection. It certainly affords a mechanism, he adds, for the development of local immunity in a region abundantly predisposed to infection, and must be of service in doing away with débris and bacteria. The development of lymphoid tissue within the walls of lymphatics in the parametrium must be regarded as an additional defensive mechanism.

The observations of Hofbauer are, as he points out, in harmony with the current conception that local tissue immunity constitutes one of the most important

1. Hofbauer, J.: The Defensive Mechanism of the Parametrium During Pregnancy and Labor, Bull. Johns Hopkins Hosp. 38:255 (April) 1926.

medical problems. There is an increasing impression, he notes, that even the temporary limitation of an infection resulting from the invasion of bacteria may determine the eventual outcome, and, further, that local reaction at the portal of entry tends to prevent general involvement. Local resistance in various organs, Hofbauer adds, is attributable to the phagocytic action of macrophages, and there are abundant indications pointing to the active rôle which this type of cell plays in defensive processes, not only against chronic infection, but against acute phenomena as well. The stimulation of the cellular reaction of the parametrium, if it is practicable and advantageous, in the treatment of such conditions as puerperal infection, thus becomes a problem of scientific therapy.

LIVER INJURY FROM BILIARY STASIS

The physiology of the bile has received much deserved attention for several years. Our knowledge of the functions of the biliary tract, notably the gallbladder and the common bile duct, has been greatly augmented.[1] The origin and fate of the bile pigments have attained an entirely new interpretation.[2] With respect to the bile salts, Whipple[3] wrote, only four years ago, "If our ignorance about the complete story of the bile pigments is disturbing, then our lack of understanding as to the source and internal metabolism of the bile acids is pathetic—this in spite of much careful study and investigation." Heretofore there has been a tendency to consider the biliary acids and pigments in the same category with respect to their physiologic history. There are increasing indications, however, that the components of the bile should be regarded as dissociated in this respect. It has been shown experimentally in cases of poisoning which led to jaundice that the production of bile acids is diminished while the formation of bile pigments may even be above normal.[4] There are extrahepatic factors concerned that may not apply with equal force to the two.

In jaundice produced by obstruction of the biliary passages and consequent stagnation of the bile, the characteristic components of the latter are supposed to appear in the urine. With respect to the bile acids there are contradictory statements. An experimental investigation of the subject by Brakefield and Schmidt[5] at the University of California Medical School showed, as might be expected, that the production of jaundice was followed by urinary excretion of bile acid and bile pigment. The output of bile acid decreased with time and finally became a small quantity. On the other hand, a low but fairly constant excretory level was maintained for the biliary pigment. It has been known for some time that the output of the acids, supposedly manufactured in the liver, is greatly decreased in chloroform intoxication, which admittedly injures the hepatic cells. Brakefield and Schmidt believe that the gradual similarly diminished urinary output of the bile acids during protracted obstructed jaundice argues for impairment of the function of the liver under such conditions. They are confirmed in this conclusion by the observation that the ability of the jaundiced dog and rabbit to detoxicate benzoic acid is markedly diminished after the onset of jaundice. Histologic studies of the liver some time after the onset of biliary stasis also point to morphologic changes along with the functional manifestations. If these observations are verified in man, it will not be easy to escape the significant conclusion that liver injury may result even from uncomplicated biliary stasis. A greater pathogenic importance thus becomes associated with jaundice, which is often regarded as a somewhat inconsequential, though disagreeable, symptom.

1. Mann, F. C.: The Functions of the Gallbladder, Physiol. Rev. **4**: 251 (April) 1924. Tissue Acidosis, editorial, J. A. M. A. **85**: 519 (Aug. 15) 1925; The Depressor Substance in Hepatic Tissue, ibid. **85**: 750 (Sept. 5) 1925; Liver Function Tests, ibid. **85**: 1062 (Oct. 3) 1925.
2. Rich, A. R.: The Formation of Bile Pigment, Physiol. Rev. **5**: 182 (April) 1925. The Formation of Bile Pigment, editorial, J. A. M. A. **85**: 271 (July 25) 1925; Bile Pigment as an Expression of Blood Destruction, ibid. **85**: 358 (Aug.) 1925.
3. Whipple, G. H.: The Origin and Significance of the Constituents of the Bile, Physiol. Rev. **2**: 440 (July) 1922.
4. Stadelmann, E.: Der Ikterus, Stuttgart, 1891, p. 116.
5. Brakefield, J. L., and Schmidt, C. L. A.: Studies on the Synthesis and Elimination of Certain Bile Components in Obstructive Jaundice, J. Biol. Chem. **67**: 523 (Feb.) 1926.

THE CONTAGIOUSNESS OF CANCER

One of the main difficulties in accepting the hypothesis that cancer is caused by specific infectious agents of any sort lies in the well established fact that cancer is not contagious in any recognizable degree, if at all. To be sure, the older literature often tells of cancer houses, cancer epidemics and cancer wells, and there has been much discussion of cancer à deux. But the evidence of contagion of cancer as implied in these discussions has failed to meet critical investigation, and at present none of it is accepted as established by most of the best authorities on cancer. Even much that has been written of contact infection between two surfaces of the same person, as lip to lip or tongue to cheek, is of doubtful authenticity. It is indeed striking that the innumerable opportunities for infection of surgeons and pathologists from the cancers they handle so freely have failed heretofore to lead to transmission of the disease, if it is the result of infection by a specific cancer parasite. Certainly these members of the medical profession get infected often enough with the various bacterial diseases of their subjects, so why not with cancer if it is an infectious disease?

Since the rediscovery by Leo Loeb and Jensen that the cancers of animals may be transplanted from animal to animal of the same species under proper conditions, it has been *a priori* possible that cancer transplantation from man to man might take place; but that such a thing has ever happened has not yet been satisfactorily established. There is a report,

attributed to Cornil, that some unnamed surgeon, of more zeal than conscience, grafted a cancer from one breast to another of the same person. Ewing says that during attempts at treatment of cancer by vaccines made from cancer tissue, occasionally unkilled cells set up new inoculation tumors. Nicholas Senn once grafted beneath his own skin a bit of a cancerous lymph node from a patient, but no growth resulted. Possibly other attempts have been made to transplant cancer from one person to another, but if so the results, whether negative or positive, cannot be found in the accessible cancer literature. And yet, in view of the fact of transplantation of cancer from one animal to another, it would be strange if a similar transplantation should not have sometime occurred through contact in man.

The foregoing considerations indicate the importance of a case recently reported in the French literature [1] which is believed by the authors to be a true instance of inoculation of a man with a tumor from another person. The victim was a French medical student, who let fall a syringe with which he was aspirating fluid that had collected beneath the wound made in the amputation of a breast for cancer. The needle penetrated deeply into the palm of the student's left hand, and, as the syringe contained the cancer fluid, might well have discharged some of its contents into the deep tissues. The student cauterized the wound himself with a galvanocautery, and the immediate effects were slight. Nothing more was observed for two years, when there began to be some pain in the hand, followed by the development of a hard swelling at the site of the needle puncture. A month later the left axillary glands became enlarged and were removed. The growth in the hand enlarged and began to ulcerate, so that a diagnosis of an infective granuloma was made, and the tissue was removed about six months after the growth was first noticed. A month later subcutaneous nodules had appeared in the skin of the forearm, and the local growth recurred, establishing beyond doubt the malignant character of the process. Therefore the left upper extremity was removed by a shoulder joint disarticulation; six months later there were no evidences of recurrence of the growth.

This history seems to be clear cut and, as far as known, the first one reported, of accidental inoculation of a medical attendant with cancer from a patient, and as such it is reported. But, unfortunately or otherwise, the evidence is by no means convincing that this is a true instance of inoculation of cancer from man to man, for the reason that the cancer of the breast of the first patient was a carcinoma, composed of solid masses of epithelium in atypical arrangement; the growth arising in the hand of the medical student was a spindle cell sarcoma, not at all resembling the breast cancer. Had the growth that arose at the site of the needle puncture been a carcinoma similar to that of the breast, there would have been no room to doubt that it was an example of transplantation cancer in a human subject. But the sarcomatous growth that was present might well have arisen as a sequel of the needle trauma independent of the contents of the needle and the syringe, and this may be the correct explanation of the whole matter. Yet the fact that the growth in the hand was a sarcoma does not exclude the possibility that it was the result of implantation from the breast cancer, for in experimental transplantation of tumors in animals it has occasionally been observed that carcinomatous transplants may in time develop sarcomatous elements from their stroma which eventually entirely replace the carcinomatous elements. Such a change might have occurred in this case, although such a transformation in a first implantation is extremely improbable. Or, one may argue that there was transmitted a cancer virus which has the capacity to produce either carcinoma or sarcoma, an hypothesis that will seem plausible to some, fantastic to others. At any rate, this case is by no means a proved instance of transplantation or inoculation of cancer from one person to another, for we have no possible way of determining that the sarcoma of the hand did not arise solely because of the trauma of the needle. The case is of great importance as being apparently the nearest thing to human cancer inoculation that has ever been observed, and it emphasizes anew the fact that cancer is not contagious or infectious in any ordinary sense, since even the single possible exception does not fully establish itself.

1. Lecène, P., and Lacassagne, A. Une observation d'inoculation accidentelle d'une tumeur maligne chez l'homme, Ann. d'anat. path. et d'anat. normale médico-chir. 3: 97 (Feb.) 1926.

Current Comment

THE CALORIGENIC ACTION OF EPINEPHRINE

Among the numerous drugs and the various hormones now known to produce specific effects in the organism there are few that act preeminently to influence metabolism directly. Thyroxin and thyroid gland substance have long been conspicuous as promoters of heat production through stimulation of basal metabolism; and of late the hormone of the suprarenal glands, epinephrine, has been demonstrated to exert an unmistakable calorigenic action. Although this has been recognized since 1909,[1] its locus has never been accurately determined. The muscles, liver and nervous tissues have all been implicated by one investigator or another. A recent experimental investigation by Hunt and Bright [2] at the Harvard Medical School indicates, however, that epinephrine has a general calorigenic action on tissue metabolism. This was ascertained by

1. La Franca, S.: Ztschr. f. exper. Path. u. Therap. 6: 1, 1909.
2. Hunt, H. B., and Bright, E. U.: Studies of the Conditions of Activity in Endocrine Glands, XVIII, Locus of the Calorigenic Action of Adrenalin with Observations on Tissue Metabolism, Am. J. Physiol. 77: 353 (July) 1926.

the ingenious plan of ascertaining the effects of the hormone on both the intact animal and on organisms from which various groups of tissues had been partially or completely eliminated. Thus, if the metabolic response to epinephrine was notably lowered after the removal of certain tissue, it would indicate that the latter had been specifically concerned in the action. The approximate uniformity of the percentage rises of metabolism of entire and "reduced" animals indicates that the response is not concentrated in any of the eliminated tissues—neither in the muscular extremities nor in the visceral organs—but is general in distribution. This is in harmony with the suggestion of Boothby and Sandiford[3] of the Mayo Foundation several years ago.

PROTEINS AND CELL GROWTH

The possibility of cultivating isolated tissue cells artificially, apart from the organism from which they were secured, early raised the hope that the technic introduced into biology by Harrison would pave the way for a much better understanding of the fundamental principles of nutrition. The phenomenon of growth presented by this method is little less than startling. It is reported from Carrel's laboratory of the Rockefeller Institute for Medical Research[4] that pure strains of fibroblasts or of epithelial cells increase in mass in an unlimited manner, when they are cultivated in plasma and embryonic tissue juice. For fourteen years, colonies of a strain of fibroblasts have doubled in size every forty-eight hours in such a medium. Pavement and thyroid epithelium also have been found to manufacture unlimited amounts of protoplasm from the components of embryonic juice. Attempts to replace this "natural" medium by artificially prepared nutrient solutions have not heretofore been attended with success. The use of amino-acids, which seem to serve successfully in place of proteins in the nutrition of animals, has left investigators in the lurch. Until recently, embryonic juice has been the only material that has been found to maintain epithelial cells and fibroblasts in a condition of true cultivation. Having observed that the nitrogenous substance utilized by the growing tissue cells is the protein itself in the nutrient medium, Carrel and Baker attempted to ascertain what degradation products of protein might facilitate increase in the mass of isolated tissue cells, for it is scarcely to be supposed that the latter would utilize directly the intact protein. Success attended the use of the higher cleavage products secured by partial hydrolysis. Proteoses prepared from various proteins, foreign as well as those from embryonic sources, were effective. Hence, the investigators now believe that a specific substance or hormone is not required for the multiplication of cells, but only the proper nutrient materials. At last, Carrel and Baker remark, the chemical nature of the nitrogenous substances that are used specifically by tissue cells in the process of multiplication has been discovered. The synthesis of protoplasm by these cells, when fed on proteoses, leads one to suppose that the marvelous effect of embryonic juice on tissue growth is merely due to a special condition of its proteins, which renders possible their splitting into proteoses by the action of the fibroblasts and epithelial cells.

3. Boothby, W. M., and Sandiford, Irene: Am. J. Physiol. **59**: 463, 1922; **66**: 93 (Sept.) 1923.

4. Carrel, Alexis; and Baker, Lillian E.: Chemical Nature of Some Substances Required for the Growth of Fibroblasts and Epithelial Cells, Proc. Soc. Exper. Biol. & Med. **23**: 627 (May) 1926.

THE VIRTUES OF LEMONS

While the orange is enjoying an increasing vogue as the result not only of its delectable flavor but also of its demonstrable richness in vitamins, its companion citrus fruit the lemon likewise seems destined for merited greater recognition. Sweetness and tartness have always vied for favor in the world of gustatory delights; even a taste of bitterness may not be objectionable unless the cup runneth over. Agreeable aroma often caps the climax of satisfaction. When the older pharmacists introduced tinctures and extracts of the peel of the orange and the lemon into their stock in trade, they could not have foretold what virtues these liquids might conceal.[1] The latter were intended primarily as flavoring agents, and they have lost their vogue as pharmacopeial potions. Modern researches have demonstrated, however, that not only the tasty juices but also the usually discarded peel, both the flavedo and the albedo portions, contain vitamin. In 1920, Osborne and Mendel[2] demonstrated that the white rind (albedo) contains vitamin B; Cooper[3] found vitamin A in the ether extract of the peel of the orange, lemon and grapefruit; and now Willinott[4] of Cambridge, England, has demonstrated that vitamin B is present in appreciable amounts in the rind of the fresh lemon and also in alcoholic extracts prepared according to pharmacopeial directions.

CRYSTALLINE TUBERCULIN

The late Professor Meldola once said that original research is in itself the most powerful weapon that has been or ever can be wielded by mankind in struggling with the great problems which nature offers on all sides for solution. To this may be appended Huxley's comment that what people call applied science is nothing but the application of pure science to particular classes of problems. The opportunity for chemistry in the development of medicine was never more promising than at the present time. The medication of the middle ages, the heritage of a belief in magic, is passing. Therapeutics is becoming rationalized. The extraordinary synthetic powers of modern organic chemistry have led to the production of new compounds with selective actions on the body; in some cases these can be intensified or modified at will. Chemistry has also enabled us to isolate and identify potent components of the tissues and secretions of the

1. Descriptions of U. S. P. products derived from the orange and the lemon are given in the Epitome of the Pharmacopeia of the United States and the National Formulary, American Medical Association, 1916, under Aurantii Amari Cortex and Limonis Cortex.

2. Osborne, T. B., and Mendel, L. B.: The Occurrence of Water-Soluble Vitamin in Some Common Fruits, J. Biol. Chem. **42**: 465 (July) 1920.

3. Cooper, Ethel: The Presence of Vitamin A in the Peel of Common Citrus Fruits, Proc. Soc. Exper. Biol. & Med. **18**: 243 (April) 1921.

4. Willinott, S. G.: The Vitamin B of Lemon Rind, Biochem. J. **20**: 31, 1926.

body, and thus to gain a more intelligent insight into the real nature of physiologic and pathologic processes.[1] Illustrations of some of the recent contributions of chemistry to medicine were reviewed in a recent issue of THE JOURNAL.[2] Only a few months have elapsed since the triumph of the isolation of crystalline insulin was announced in these columns.[3] The crystallization of a compound is particularly satisfactory to the chemist because such structural exhibition is regarded as an index of comparative purity. Now the isolation of a crystalline protein with tuberculin activity has been reported by Dr. Florence B. Seibert[4] of the Sprague Memorial Institute in Chicago. The crystallized product elicits the characteristic skin reaction in tuberculous subjects. Chemically, it is shown that wherever the activity is lost, following enzyme treatment, there occurs also a corresponding reduction in whole protein, with an increase in proteose and residual nitrogen. Insulin also has many of the marks of a protein-like substance. When Mulder coined the word "protein" in 1839 he could scarcely have anticipated the manifold fundamental importance of the group of substances designated thereby.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Hospital News.—The Los Angeles Children's Hospital recently celebrated its twenty-fifth anniversary; of the 2,370 children cared for in the last year, 1,053 were charity patients.——The contract has been let for the erection of the new $1,000,000 Good Samaritan Hospital, Los Angeles.

Personal.—Dr. Philip K. Brown, San Francisco, has been appointed editor of *Better Health*, effective, August 1.——Philip E. Smith, Ph.D., associate professor of anatomy, University of California, has accepted a similar position at Stanford University, beginning next September. Dr. Smith has been at the state university for fourteen years.

Suit Follows "Permanent Shave."—George Scott, a motion picture appliance manufacturer in Los Angeles, recently brought suit for $175,000 damages against Jules M. Marton, inventor of a so-called method of removing hair, it is reported. Scott claims that his face was injured when Marton gave him a "permanent shave." In 1924, Marton is reported to have pleaded guilty to violation of the medical practice act and to have paid a fine of $100.

Meeting of Health Officers.—At the meeting of the League of California Municipalities, August 16-20, Dr. John L. Pomeroy, Los Angeles, will discuss "Needed Public Health Legislation"; Dr. Walter W. Cress, Sacramento, "The Control of Smallpox"; Dr. Virgil G. Presson, Santa Ana, "Diphtheria Immunization During the Past Year," and Dr. Ellen S. Stadtmuller, San Francisco, "The Preschool Drive." At the Round Table luncheon discussions, the subjects will be child welfare, garbage and sewage disposal, epidemiology, food inspection, and laboratory diagnosis.

1. The Future Independence and Progress of American Medicine in the Age of Chemistry, Report of Special Committee, American Chemical Society.
2. Some Recent Contributions of Chemistry to Medicine, editorial, J. A. M. A. **86**: 1838 (June 12) 1926.
3. Crystalline Insulin—Another Chemical Triumph, editorial, J. A. M. A. **86**: 350 (Jan. 30) 1926.
4. Seibert, Florence B.: The Isolation of a Crystalline Protein with Tuberculin Activity, Science **63**: 619 (June 18) 1926. Long, E. R., and Seibert, F. B.: The Chemical Composition of the Active Principle of Tuberculin, I-VII, Am. Rev. Tuberc. **13**: 393, 1926.

COLORADO

Society News.—Dr. John R. Ransom, Denver, addressed the San Juan Medical Society, July 10, on "Cure of Cancer by Roentgen-Ray Therapy"; Dr. Allen J. Nossaman on "Medical Ethics," and Arthur C. Cross, A.M., of the University of Colorado Extension Division, on "Child Welfare Clinics."——The San Luis Valley Medical Society met at Saguache, July 10, and was addressed by Dr. John B. Crouch, Colorado Springs, among others, on "Differential Diagnosis of Chest Conditions." There was a dinner at the Saguache Hotel, where the physicians' wives were entertained at cards during the scientific meeting. Dr. Isaac L. Gotthelf was elected president of the society; Dr. Arthur B. Gjellum, vice president, and Dr. Paul K. Dwyer, secretary.

CONNECTICUT

Mental Hygiene Program at Yale.—With the aid of $50,000 a year for five years from the Commonwealth Fund, Yale University will provide this fall a psychiatric program to assist students in their problems in the field of mental hygiene. The program, outlined in *Medical Hygiene Bulletin*, includes lectures to sophomores to give them a broad historical concept of life with emphasis on the adaptation of the individual to his environment. The lectures for juniors and seniors will cover problems associated with vocational aptitudes. For freshmen, there will be voluntary conference groups in which the mental hygiene point of view will be presented and through which the students will become acquainted with the staff of psychiatrists; these groups will be limited to fifteen or twenty men. From time to time, general lectures on mental hygiene will be given to a larger number of students. Preventive work will be carried on with students who wish aid in adjusting minor difficulties; persons acutely ill will be reached through the university department of health, or through their own initiative, or through faculty cooperation. The resident staff will comprise Dr. Lloyd Thompson, clinical instructor in psychiatry at Yale, Dr. Clements C. Fry, assistant in psychiatry at Harvard Medical School, and Major Harry N. Kerns, Medical Corps, U. S. Army, who has been awarded a fellowship by the National Committee for Mental Hygiene; the advisory committee includes Dr. Arthur H. Ruggles, Dr. Edward A. Strecker and Dr. Frankwood E. Williams, and Dr. Stewart Paton, chairman of the resident group in psychiatry and mental hygiene.

Clinical Congress of State Society.—The second clinical congress of the Connecticut State Medical Society will be held in Sprague Memorial Hall, Yale University, New Haven, September 21-23. In addition to the speakers announced in THE JOURNAL, June 19, there will be Dr. Allen K. Krause, Johns Hopkins University, Baltimore, "Trend of Medical and Surgical Treatment of Tuberculosis"; Dr. William J. MacDonald, St. Catherines, Ont., "Some Clinical Results with Liver Extract in Arterial Hypertension"; Dr. Haven Emerson, professor of public health administration, Columbia University College of Physicians and Surgeons, New York, "Periodic Medical Examination"; Dr. James W. Sever, Harvard University Medical School, Boston, "Physiotherapy: Its Use by the General Practitioner"; Dr. Philip D. Kerrison, New York, "Treatment of Ear Diseases by the General Practitioner"; Dr. C. Morton Smith, Harvard University Medical School, "Certain Phases of Congenital Syphilis"; Prof. Edouard A. Rist, Paris, France, "Tuberculosis and Pregnancy"; Dr. Lester R. Whitaker, Harvard Medical School, "Present Status of Gallbladder Diagnosis"; Dr. Frederic J. Cotton, Boston, "Fracture of the Hip"; Dr. Louis H. Clerf, Philadelphia, "Diseases of the Larynx," and Dr. Roy G. Hoskins, Columbus, Ohio, "Critique of Gland Therapy." The ten dollar fee for the congress includes admission to all sessions and to the smoker, also luncheon on each day, parking space and garage, and a copy of the abstracts of the papers, but not the use of rooms in the dormitory, breakfast or dinner. Inquiries should be addressed to Dr. Creighton Barker, 129 Whitney Avenue, New Haven. The congress is planned particularly for the general practitioner, and physicians outside the state of Connecticut will be welcome.

FLORIDA

Dr. Spyros Vamvas Denied New Trial.—The circuit court of appeals in New Orleans has denied a new trial to Dr. Spyros D. Vamvas, Jacksonville, who, about a year ago, it is reported, was sentenced to ten years in prison for violation of the Harrison Narcotic Law. Dr. Vamvas was being sought at the time of this report; his bondsmen had been notified that the $10,000 bond had been ordered estreated.

Society News.—At a banquet given by the Palm Beach Medical Society, July 22, a medical society representing the twenty-first judicial district was organized, and Dr. Hady C. McDermid, Okeechobee, was elected president; Dr. James W. Bishop, Alachua, vice president, and Dr. Grover C. Hardie, Fort Pierce, secretary. Among the speakers was Dr. H. Mason Smith, Tampa, president of the Florida State Medical Association.

Personal.—Dr. Charles H. Farmer left the service of the state board of health as medical officer for the Jacksonville district, recently, to engage in practice at Lakeland.—— Dr. Elliott M. Hendricks, Fort Lauderdale, has been appointed superintendent of the Edwards Hospital, to succeed Dr. Russell R. Hippensteel, who has returned to Indianapolis.—— Dr. Wyman W. Harden has been appointed commissioner of health of St. Petersburg, to succeed Dr. Ray H. Davies.

Postgraduate Course on Venereal Disease.—The state board of health conducted in June a short postgraduate course in Jacksonville for the study of venereal diseases in cooperation with the U. S. Public Health Service and the American Social Hygiene Association. Fourteen physicians from widely separated parts of the state took the course, and six physicians from Jacksonville. There were lectures, clinics and motion pictures. The Duval County Hospital provided the accommodation for these meetings.

IDAHO

Society News.—Physicians of Latah, Benewah and Clearwater counties have organized a Tri-County Medical Association, electing Dr. John W. Stevenson, Moscow, president; Dr. Frank C. Gibson, Potlatch, vice president, and Dr. John H. Einhouse, Moscow, secretary-treasurer.

Personal.—Dr. John H. Sturges, Coeur d'Alene, has been appointed in charge of a mission hospital for the Seventh Day Adventists in the Belgian Congo region of South Africa for a period of seven years; Dr. John T. Wood will succeed Dr. Sturges as secretary of the Kootenai County Medical Society for the remainder of the year.

ILLINOIS

Inmates of State Institutions.—The state department of public welfare reports that there were 33,630 inmates in the twenty-six state institutions, June 30; 20,256 were in hospitals for the insane; 4,166 in institutions for the feebleminded, and 5,708 in penal institutions. The department of welfare then had 4,845 employees. The cost per capita for maintaining these institutions during the last year was $101.55; the total cost was $11,075,527.

Unlicensed Chiropractors.—Among the chiropractors arrested several weeks ago in Rock Island County on charges of practicing without a license, four have been found guilty and are awaiting sentence; four cases have been dismissed, two promising to suspend practice in Illinois, and two promising to qualify for the state examinations. John Lee, East Moline, the last one arrested in this lot, was found guilty in the Rock Island County court, July 13.

Society News.—Dr. William Engelbach, St. Louis, addressed the Jefferson County Medical Society, Mount Vernon, June 17, on "Diagnois and Treatment of Diseases of the Heart," illustrated with lantern slides. The society has twenty-eight members, but there were seventy-five physicians in attendance.——Dr. Harold M. Camp, Monmouth, secretary, state medical society, addressed the Ogle County Medical Society, Oregon, recently on "Acute Osteomyelitis."

Personal.—Dr. Alexander L. Darche has been transferred from the Anna State Hospital to the Lincoln State School and Colony.——Dr. and Mrs. Arthur G. Meserve, Robinson, celebrated their golden wedding anniversary, July 19.—— Dr. Clarence J. McCullough, who has been radiologist at the Decatur and Macon County Hospital for about four years, has resigned on account of poor health.——Dr. Clyde H. Cable tendered his resignation as superintendent of the Elmgrove County Sanitarium, Bushnell, effective, July 31.—— Dr. Haim I. Davis, Chicago, has been appointed clinical professor of psychiatry at the University of Illinois College of Medicine.

Automobiles More Fatal Than Infectious Diseases.—The mortality from automobile accidents last year in Illinois was 23 per cent higher than it was in 1924. Automobiles were directly responsible for more deaths than diphtheria, measles, scarlet fever, typhoid and whooping cough combined, which caused a total of 1,530 deaths in the state, while automobiles caused 1,548. The state department of health shows that persons on foot fare worse than those who ride in machines, as far as fatalities are concerned; 833 of those killed were pedestrians. The number of motor vehicles in the state increased more than 30 per cent during 1925, while in the country at large the increase was less than 13 per cent. The health department credits the decline in fatal automobile accidents in New York during 1925 to strict enforcement of a law which involves the revocation of the driver's license, to roads constructed with the safety factor in view, to vigorous patrols, and to carrying in the newspapers the names of persons whose licenses to drive have been revoked.

Chicago

Society News.—At a recent meeting of the Chicago Urological Society, Dr. Harry C. Rolnick was elected president; Dr. Russell D. Herrold, vice president, and Dr. Vincent J. O'Conor, secretary-treasurer.

Visiting European Dentists.—It has been announced that 200 European dentists will be the honored guests of the Chicago Dental Society, August 30-31, and that a number of them will appear on the program of the society at the regular September meeting, which has been advanced to the foregoing date. The guests will come to Chicago after having attended the Seventh International Dental Congress in Philadelphia.

Emergency Medical Service.—The Chicago Medical Society has arranged to cooperate with the Illinois Bell Telephone Company in providing physicians for emergency calls received over the telephone, and the society desires all its members who will accept such calls as are referred to them through the society's own exchange to send in their name and address, so that they may be registered. The telephone company in the future will refer all these calls to the telephone exchange of the medical society.

Second Course of Free Summer Clinics.—The second course of the free summer clinics at the Cook County Hospital under the auspices of the Chicago Medical Society began, August 2. There was a symposium in the surgical amphitheater, August 3, on goiter, and two symposiums, August 3, on gynecology, and nose and throat. Every physician registered was present at the appointed hour at the opening of the first session. There was continued regularity of attendance throughout, and the enthusiasm was such as to indicate that the first summer clinic was most successful. The second course will comprise much the same series of clinics as the first clinic, with the exception of six instructors and additional hours.

Liquor Licenses Revoked.—The office of the local prohibition director issued orders recently, it is reported, revoking the liquor licenses of the following:

Dr. Mary F. Adams.
Dr. Albert J. Bennett.
Dr. Julius Berliant.
Dr. William R. Campbell.
Dr. Joseph S. Cohn.
Dr. Raymond H. Davis.
Dr. Hugh M. Dewar.
Dr. Stephen D. Dillard.
Dr. William G. Elliott.
Dr. Ralph Epstein.
Dr. Julian M. Finke.
Dr. William I. Fishbein.
Dr. Simon Glickson.
Dr. George W. Good.
Dr. Joseph A. Grendeske.
Dr. Harry M. Jones.
Dr. Victor Josephson.
Dr. Theodore M. Kamins.
Dr. William E. Kidd.
Dr. Frederick F. Kitzing.
Dr. LeRoy P. Kuhn.
Dr. Jesse H. McIntosh.
Dr. Jacob K. Meyers.
Dr. William Miller.
Dr. Millicent Morden.
Dr. Frank T. Murphy.
Dr. James Murphy.
Dr. Melvin M. Newman.
Dr. Thomas J. Ney.
Dr. John J. Nolan.
Dr. Ralph C. O'Halloran.
Dr. Horace D. Reynolds.
Dr. Charles H. Richards.
Dr. Frank H. Schembs.
Dr. Irving Schwager.
Dr. Sherman L. Shapiro.
Dr. Filadelfo D. G. Silva.
Dr. Samuel Sinkler.
Dr. Leslie D. Smith.
Dr. Irving G. Spiesman.
Dr. Julius Spiro.
Dr. Julius Spivack.
Dr. Burton A. Solar.
Dr. C. Lambert Townsend.
Dr. Joseph Watry.
Dr. Abraham J. Weissman.
Dr. Gillbert H. Wynekoop.

The liquor licenses of the following drug stores, among others, also were reported revoked:

Strauss Building Pharmacy, 310 South Michigan Blvd.
Druxco Company Stores, 3139 Broadway; 6658 Stony Island Avenue, and 1100 Bryn Mawr Avenue.
Beach View Pharmacy, 4463 Broadway.
Samuel Golden's Pharmacy, 2001 Evergreen Avenue.
Aldona Drug Store, 4702 South Western Avenue.
Ogden Drug Store, 1752 Ogden Avenue.
The Grant Drug Company, 4700 Kenmore Avenue.

INDIANA

Hospital News.—Dr. Abraham R. Hollender, Chicago, addressed the staff and invited guests of the Deaconess Hospital, Evansville, June 16, on "Physical Therapy in Eye, Ear, Nose and Throat Practice."

Society News.—A banquet given under the auspices of the Logansport Dental Society, recently, was attended by about

250 physicians and dentists; Dr. Pliny G. Puterbaugh, Chicago, gave an address on "Allied Problems of Medicine and Dentistry."

Personal.—Dr. Alfred O. Adams has been appointed chief resident physician at the James Whitcomb Riley Hospital, Indianapolis, and Dr. Lewis N. Ashworth, chief resident physician at the Robert W. Long Hospital.——Dr. Henry R. Alburger has resigned as pathologist at the City Hospital, Indianapolis, and Dr. Elmer Funkhouser has been appointed to that position, effective August 1. Dr. Alburger was for years in charge of the pathologic department at Indiana University, and previously was professor of pathology at the University of Pennsylvania. He is said to have organized the pathologic department at the City Hospital in 1911, and to have been connected with it until 1916, and was reappointed in 1922. Dr. Funkhouser was in charge of this department at the City Hospital previous to the last appointment of Dr. Alburger.

KENTUCKY

Hospital News.—Dr. William M. Brown has been appointed superintendent of the new Shriner's Hospital for Crippled Children at Lexington, which is nearing completion.——Lincoln County Memorial Hospital, Stanford, was recently closed.

State Aid for Counties.—The governor has approved an appropriation of $2,500 annually to each of the counties that have established health departments; although the legislature passed a law in 1922 to aid county health work, this is the first time the counties have requested funds from the state. Mason, Boyd, Scott, Fulton, Johnson, and Fayette counties have health departments.

Society News.—Dr. Irvin Abell, Louisville, addressed the Madison County Medical Society, Boonesboro, July 14, on "Surgery of the Tuberculous."——Dr. William D. Haggard, Nashville, Tenn., formerly President of the American Medical Association, addressed the Christian County Medical Society, Hopkinsville, July 21, on "Management of Goiter," and Dr. Carl R. Crutchfield, Nashville, on "Blood Transfusion."

Tuberculosis Clinics.—The Mason County health director has arranged a tuberculosis clinic to be held in the offices of the county health department, August 10-12, which will be in charge of Dr. Paul A. Turner, state tuberculosis sanatorium, Louisville, and Dr. James S. Lock, secretary, Kentucky Tuberculosis Association. All persons in Mason County are invited to attend the clinic; those suspected of having incipient tuberculosis will be examined and advised without charge.

MICHIGAN

Personal.—Dr. Gertrude D. C. O'Sullivan, who resigned as city physician of Port Huron, May 1, has been reappointed to that position to succeed the late Dr. William B. James.——Dr. Ambrose G. Cowles has been appointed health officer of Durand.

Hospital Dedicated.—The governor made the principal address at the dedication of the new $270,000 James Decker Munson Hospital and its recently completed memorial pavilion, Traverse City, July 28-30; other speakers included Dr. Victor C. Vaughan, Washington, D. C., Dr. Hugh Cabot, Dr. Frederick A. Coller, Dr. Carl E. Badgley, Dr. Richard M. Olin, and Dr. Arnold L. Jacoby. There was a mass meeting, a day of clinics, and a dinner given by the Grand Traverse-Leelanau County Medical Society in honor of the governor and other state officials.

MINNESOTA

Dermatologic Meeting.—The Minnesota Dermatological Society met, July 10, in Rochester; there was a demonstration of cases at the Worrell Hospital and a dinner at the Golf Club; Dr. Oliver S. Ormsby, professor of dermatology, Rush Medical College, Chicago, was the principal speaker.

Dr. Weeks Honored.—About 400 friends of Dr. Leonard C. Weeks held a basket picnic in the city park, Detroit, July 16, to celebrate his return to health and to that community, where, for many years, he has practiced medicine and served the city as mayor, member of the school board, and in other civic capacities. The present mayor, Mr. Knudson, the toastmaster, introduced the speakers, associate physicians, the editor, and other persons prominent in the community. The mayor then presented to Dr. Weeks a white silver watch and chain as a token of the appreciation of his long and faithful service. Dr. Weeks came to Detroit in 1896.

New Fellows at Mayo Foundation.—The following physicians have recently been appointed fellows in surgery at the Mayo Foundation:

Dr. Goeffrey H. Baxter, San Francisco.
Dr. George F. Eubanks, Jr., Atlanta, Ga.
Dr. Louis M. Fowler, Greensboro, N. C.
Dr. Ben Fox, St. Louis.
Dr. Clyde H. Frederickson, Minneapolis.
Dr. Ralph W. Good, Cincinnati.
Dr. Andrew Stephens Graham, Columbia, S. C.
Dr. Kenne O. Haldeman, San Francisco.
Dr. Frank Robert Hanlon, Hazelton, Pa.
Dr. Eugene L. Kellum, Norfolk, Va.
Dr. Leslie L. Nunn, Seattle.
Dr. Victor S. Quale, Rochester.
Dr. William C. Wright, Terre Haute, Ind.

The following have been appointed fellows in medicine:

Dr. Carl H. Bayha, Columbus, Ohio.
Dr. Catherine Corbeille, Detroit.
Dr. John Dwight Davis, Genoa, Neb.
Dr. Henry F. Hunt, Madisonville, Tenn.
Dr. Ferdinand M. Jordan, Scranton, Pa.
Dr. Zeno N. Korth, Omaha.
Dr. Melvin W. Binger, Dorchester, Neb.
Dr. Fay H. Squire, Aberdeen, S. D., is majoring in radiology.

MISSOURI

License Revoked.—At a meeting in St. Louis, June 28, the state board of health revoked the license of Dr. Elbert Baker of Halliday, it is reported, after a hearing on charges of "unprofessional conduct."

Hospital News.—A new hospital and dispensary is planned, it is reported, in connection with the St. Louis University Medical School, St. Louis; an option has been obtained on a site convenient to the medical school, and about $125,000 has already been pledged for the project.

Resolution About Free Clinics.—The Missouri State Medical Association passed the following resolution at its recent annual meeting in St. Louis:

WHEREAS, The free clinics held in the various counties under the auspices of the county health units are being abused by people who are able to pay for treatment received, and

WHEREAS, The regular physicians in such counties believe that such abuse is unfair and unjust to them as well as to the entire tax paying citizenship, therefore, be it

Resolved, That this association does not approve of such abuse, and, be it further

Resolved, That we endorse any plan that will do away with such abuse, and we recommend that any one applying for treatment at these clinics must have a statement signed by two reputable citizens of their community that the person applying for such treatment is not able to pay for treatment, and we further recommend that the county health officer and county nurse answer only calls that are endorsed by the physicians from the community wherein they originated where possible to obtain such endorsement; but where such endorsement cannot be obtained, the health officer and county nurse may use their own judgment about answering calls.

NEW JERSEY

Society News.—The Atlantic County Medical Society held its annual outing at Seaview Golf Club, June 10; a testimonial dinner was given in the evening to Drs. George Scott and Philip Marvel, Sr., Atlantic City, on which occasion Dr. Hobart A. Hare, professor of therapeutics and materia medica, Jefferson Medical College, Philadelphia, gave an address.——Col. Charles M. Gandy, U. S. Army, retired, has been elected censor of the Cape May County Medical Society, to succeed the late Dr. Virgil M. D. Marcy, Jr.——The Medical Society of New Jersey at its one hundred and sixtieth annual meeting, Atlantic City, passed a resolution authorizing the establishment of permanent headquarters for the society; it was also voted to form a women's auxiliary, and Mrs. Samuel Barbash, Atlantic City, was elected chairman.

NEW YORK

Society News.—Dr. James H. Lewis has been elected president of the Buffalo Surgical Society; Dr. Herbert A. Smith, vice president; Dr. Frank W. McGuire, treasurer, and Dr. Julius Richter, secretary.

Personal.—Dr. Doris A. Murray, formerly in charge of the maternity division, Maryland State Health Department, has been appointed director of the maternity, infancy and child hygiene department of the Cattaraugus County Health Association.

Thirty Killed by "Moonshine."—According to newspaper reports, thirty deaths were recorded in Buffalo and vicinity, July 26, resulting from wood alcohol in liquor obtained at soft drink stands. The death toll in Buffalo over the week-end was thirteen, that in Toronto and nearby towns in Ontario thirteen; the other four died at Lockport. Carl Maischos, a soft drink dealer, was arrested; James Volker,

distributor of the liquor, was being sought, and John Banos, the middleman, was held on a charge of homicide. Banos claims that he returned 240 gallons of the liquor to Volker when he found it was not "fit to drink." A press report, August 2, quotes the chief chemist, bureau of internal revenue, New York, as stating that a total of 700 persons died in that city last year from "poison liquor."

Smallpox and Unvaccinated Friends.—A case of smallpox developed in Tonawanda in Erie county about June 13 in a young woman who had recently returned from a visit in Ohio; a friend of this woman developed smallpox about June 30, and a second friend developed the disease about July 3; none of these three had ever been vaccinated. The state commissioner of health says that a young man recently contracted smallpox and all members of his family were immediately vaccinated, except an elder brother, who was a conscientious objector; this brother developed one of the most severe cases of smallpox seen in the state for some time; his face was covered with pustules, and so swollen that his eyes were nearly closed. All the other members of this family escaped the disease. There were forty-three cases of smallpox in New York last month. A conductor on a passenger train running between Buffalo and Syracuse was reported to the health authorities of Buffalo, June 28, as having smallpox; he became ill, June 18, but attended to his train from June 22 to June 26, during which time he was in the infective stage.

New York City

Personal.—Dr. Isidor J. Landsman, for eleven years on the staff of the roentgen-ray department of Fordham Hospital, has been appointed roentgenologist at Bellevue Hospital.——Dr. David E. Hoag, clinical professor of neurology, University and Bellevue Hospital Medical College, recently served a fifteen day period of training with the two hundred and forty-fifth coast artillery at Fisher's Island.——Dr. Achilles Edward Davis has been made a consultant ophthalmologist to the New York Post-Graduate Medical School and Hospital.——Dr. Marks S. Shaine has been appointed an instructor in medicine, department of gastroenterology, Columbia University College of Physicians and Surgeons.

Dr. Leonard Lincoln Landis Files Petition in Bankruptcy.—The director of the "House of Health," Dr. Leonard Lincoln Landis, filed a petition in bankruptcy in court, July 31, it is reported, placing his assets at $501,025, and his liabilities at $76,866. The assets included, as required by law, two libel suits, aggregating $450,000; among the creditors were the Schindler Advertising Agency, $3,200, and the Rotaprint Gravure Company, $8,200. Dr. Landis was recently cited to appear before the state board of medical examiners to show cause why his license to practice should not be revoked on charges of "defraud and deceit"; at that time, the New York *World* stated that he "admittedly spends around $160,000 a year advertising his 'House of Health,' at no. 140 East Twenty-Second Street, and derives a gross income therefrom computed at $750,000 annually."

Increase in Rabies in Dogs.—The city department of health considers the prevalence of rabies in dogs in New York as startling, and the increase in the number of dog bites as alarming. In the first six months of this year, 200 of the 395 dogs examined by the bureau of laboratories were positive for rabies, while during the first six months of 1925, only twenty-five among the 152 examined were positive. This is the first time in a long period that the number of positive specimens submitted for examination exceeded the number of negatives. Since 1920 there has been a constant increase in the number of persons bitten by dogs from 3,049 to 6,714, and 4,077 persons were bitten in the first half of 1926. There was only one human death from rabies in 1925, and none to date in 1926. The prevalence of rabies among dogs indicates, however, that in every instance in which the condition of the dog responsible for an injury cannot be definitely ascertained, prophylactic antirabic treatment should be administered.

NORTH CAROLINA

License Revoked.—At a special session of the state board of medical examiners, Raleigh, July 20, the license to practice of Dr. Robert S. Carroll, Asheville, was revoked by the board, it is reported; notice was immediately given of appeal to the superior court of Buncombe county.

University News.—Plans have been completed for the new Duke University at Durham with the exception of those for the medical school, it is reported; studies are now being made of the plans of several medical schools in this country. It is expected that the announcement of the appointment of the dean of the new medical school will be made within a short time.

Licenses Granted.—The state board of medical examiners granted licenses, following examination, to ninety-three physicians at its recent annual session; there were also nineteen licenses granted by reciprocity among twenty-four applications. This is said to be the first time that every applicant for examination passed the board; among those examined were four women and four negro physicians.

Hospital News.—Work will start at once on the contruction of a new $395,000 wing for the hospital for the insane at Raleigh to replace the wing destroyed by fire a few weeks ago.——Construction will begin at once on the Richardson Memorial Hospital for Negroes at Greensboro. The Richardson family gave $50,000 for this purpose, and additional gifts make possible the erection of a plant costing about $100,000.——Johnston County is preparing to hold an election on the question of establishing a county tuberculosis sanatorium.——The new Thompson Memorial Hospital was recently opened, replacing the Thompson hospital, which was burned in 1924. Dr. Thomas C. Johnson will direct the medical work.

Society News.—The Tri-County Medical Association was the guest of the Fitt County Medical Society at Greenville, July 8. Dr. David T. Tayloe, Washington, gave an address on "The Thymus Gland," and Dr. Cicero J. Ellen, Greenville, on "Defective Vision in the Young."——Dr. John Q. Myers, Charlotte, paid his initial visit as president of the State Medical Society to the Moore County Medical Society, Jackson Springs, July 5, and in an address stressed the fraternal value of medical organizations.——The members of Johnston County Medical Society were the dinner guests of Dr. and Mrs. Herbert H. Utley, Benson, in celebration of their silver wedding anniversary.——The governor has announced that the survey of women in industry in North Carolina, for which he had appointed a board to direct the survey, will not be made.

NORTH DAKOTA

Hospital News.—The government has purchased 50 acres near Fargo as a site for a new $300,000 veterans' bureau hospital.——An eleven bed community hospital, costing about $15,000, is to be erected at Ambrose.

Society News.—Dr. Stuart Pritchard, Battle Creek, Mich., recently addressed the annual meeting of the North Dakota Academy of Ophthalmology and Oto-Laryngology at Minot on "Relation Between the Upper and Lower Respiratory Tract," and Dr. William W. Lewis, St. Paul, on "Incipient Glaucoma."

OHIO

Health Department Ousted.—The mayor of Marietta, John W. Gray, declared the offices of health commissioner, city nurse, sanitary officer, health clerk and indigent physician vacant, June 16, it is reported, on the grounds that the incumbents had failed to qualify by failing to file bonds within the period required by law. Immediately thereafter, the board of health elected Dr. John B. McClure health commissioner, and filled other positions in the health department with new appointees.

District Clinics for Crippled Children.—The state department of health has initiated a plan whereby clinics for crippled children will be held for a group of counties rather than for a single county. The district clinic at Waverly, June 30, was attended by crippled children from Pile, Vinton, Scioto and Ross counties. During April, May and June, eighty-two crippled children were committed to the division of charities, department of welfare, for treatment, and they were from only thirty-seven of the eighty-eight counties in the state.

Personal.—Dr. William L. Evans, Hanover, will be a candidate at the August 10 primaries for representative in Congress from the seventeenth district.——Dr. A. Graeme Mitchell, B. K. Rachford professor and head of the department of pediatrics, University of Cincinnati College of Medicine, has been appointed a member of the board of health to succeed Dr. Archibald I. Carson.——Dr. Reverdy E. Hughson, Bluffton, has been appointed assistant superintendent of the Orient State Hospital, Orient; Dr. Hughson has been a practicing physician in Bluffton for about thirty years.

OKLAHOMA

Interest in Public Health Increasing.—The committee on health problems in public education of the Oklahoma State Medical Association recently reported that interest in public health in that state is increasing. Evidences of this are, the committee said, the addition of McCurtain and Kay counties to the list of full-time health units, of which there are now nine serving about 27 per cent of the people; many public schools have strengthened their health service and are having defects of children corrected; the state department of education has requested the department of health to outline courses on health education for teachers to use in the schoolroom; a crippled children's society has been organized and a malaria survey has just been completed by the International Health Board; the tuberculosis and cancer clinics conducted by the Oklahoma Medical Association are well attended and, as recently noted in THE JOURNAL, a campaign is being conducted to admit the state in the United States registration area; one of the Oklahoma schools won the health playwriting contest recently conducted by the National Tuberculosis Association.

PENNSYLVANIA

State Will Examine Rural Water.—A new service for the rural population of Pennsylvania has been instituted by the state department of health, which will examine on request any private water supply in the state. Heretofore the department has been able to examine only water supplies along the state highways and other private supplies used by at least six families. All farmers now may obtain this service by a request direct to the bureau of engineering, state department of health, Harrisburg.

Surgical Research.—Through a provision in the will of the late Dr. J. William White, one time John Rhea Barton professor of surgery, the University of Pennsylvania is the recipient of a $150,000 bequest, the income of which is to be devoted to a chair of research surgery. The incumbent, when appointed, will be attached to the surgical staff with clinical facilities in the University Hospital. Beds in the surgical wards will be provided for patients with lesions related to the problem or problems under investigation. The position offers unusual opportunity for the young man with surgical aspirations who, by investigation, teaching and clinical experience, wishes to prepare himself for a university career.

Petition for Merger.—The trustees of the University of Pennsylvania and the Diagnostic Hospital of Philadelphia have filed a petition in common pleas court for permission to merge the hospital with the graduate school of medicine of the university. The agreement sets forth, it is reported, that Dr. Henry B. Ingle of the Diagnostic Hospital staff shall be the first director of the diagnostic clinic of the graduate school of medicine, and that the university shall establish the clinic within a year from the date of occupancy of the hospital building soon to be erected at Nineteenth and Lombard streets, for which a permit was granted by the Bureau of Building Inspection, July 27. The agreement provides, also, that the dean of the graduate school of medicine, George H. Meeker, Ph.D., and Dr. Ingle, the director of the clinic, shall endeavor to arrange so that other members of the staff of the Diagnostic Hospital may assist in the work of the graduate school. It is further agreed that all assets of the hospital shall be transferred in fee simple to the university to be held as a separate trust fund to be known as "The Endowment Fund of the Diagnostic Hospital," to be invested and the income to be used for the general purposes of hospitals.

Philadelphia

Medal Awarded to Dr. Coolidge.—The Franklin Institute of Philadelphia has awarded the Howard N. Potts gold medal for 1926 to William D. Coolidge, Ph.D., inventor of the roentgen-ray tube which bears his name, now assistant director, research laboratory, General Electric Company. The medal will be awarded, October 20, by the institute, "in consideration of the originality and ingenuity shown in the development of a vacuum tube that has simplified and revolutionized the production of x-rays." Dr. Coolidge will then present a paper on his new cathode ray tube.

Visiting Chemists.—The largest contingent of foreign chemists that has visited America will join in celebrating the Golden Jubilee of the American Chemical Society at Philadelphia, September 6. Among the guests will be Sir James Irvine, head of the chemistry department, Scottish University of St. Andrews; Leonor Michaelis, professor of biologic chemistry, University of Berlin; Ernst Cohen, professor of physical chemistry, University of Utrecht; Camille Matignon, editor in chief of *Chimie et industrie*, and Gabriel Bertrand, professor of biologic chemistry at the Sorbonne, and chief of the service of biologic chemistry at the Pasteur Institute; J. N. Bronsted, Copenhagen; Peter Debye, Zurich, Prince P. Ginori Conti from Italy, and many others. The American Chemical Society has elected to honorary membership fourteen prominent chemists representing various countries, and they too will be present at the Philadelphia meeting. Some of these distinguished guests will lecture at various universities throughout the country following the meeting.

WASHINGTON

Sanipractors Petition for Initiative Fails.—John E. Lydon, "author of sanipractic," and his assistants have failed to secure within the time limit the 40,000 names on his initiative petition necessary for a referendum on sanipractic in November. In their sixty day drive for names, the sanipractors visited every section of the state, but were able to secure only about 23,000 names. The *Messenger* considers that this shows that public sentiment overwhelmingly sustains the action of the last legislature in acting adversely on various sanipractic bills.

Public Health League Election.—At the annual convention of the Public Health League of Washington, Spokane, recently, Dr. Adolph O. Loe, Seattle, was elected president; Dr. Herbert E. Coe, Seattle, secretary-treasurer, reelected, and the following physicians were elected district presidents: Harry E. Rhodehamel, Spokane; Edwin W. James, Tacoma; John R. Morrison, Bellingham; Floyd A. Bird, Olympia; Arthur B. Shaw, Longview; Kay England, Yakima; Edward L. Whitney, Walla Walla, and Frank A. Bryant, Colfax. The league has also an executive committee and board of trustees, each composed of physicians, a dental bureau, a pharmacy bureau, a public health nursing bureau, a general bureau, and a nutrition bureau; it works hand in hand with the state medical society and other organizations interested in public health, and in the last six years has issued more than 500,000 bulletins.

WEST VIRGINIA

Health Officer Appointed.—Dr. John Thames of Preston County has been appointed full-time health officer of Kanawha. The state medical board states that Dr. Thames has had twenty years' experience at the head of different full-time health units, many of which were spent in Little Rock, Ark., his former home, and that for the past three years he has been head of the Preston County health unit.

Mortality in 1925.—The death rate in West Virginia for 1925 was 10.48 per hundred thousand of population. According to the department of commerce, the highest rates were for diseases of the heart, 107 per hundred thousand of population; mine accidents, 32; influenza, 24; pneumonia, 79; tuberculosis, 77; nephritis, 65; typhoid and paratyphoid, 20; West Virginia was admitted to the U. S. registration area in 1925.

"Doctor" Candidates.—The *Charleston Mail* states that the unusual number of "doctors" who are candidates for nomination to the state legislature is causing comment in political circles. An incomplete list, it is said, shows that twenty "doctors" are candidates for the house of delegates, and three for the state senate. We wonder if all of them are doctors of medicine. West Virginia's last legislature passed a law legalizing chiropractic and placing two chiropractors on the public health council.

Society News.—Dr. John M. Emmett, Clifton Forge, Va., addressed the Greenbrier County Medical Society, June 15, on "Indications and Use of Radium in Pelvic Diseases."—Dr. Walter W. Point, Jr., Charleston, addressed the Fayette County Medical Society, July 13, at Montgomery, on "Toxemias of Pregnancy," and Dr. Homer A. Walkup, Mount Hope, on "Treatment of Puerperal Infections."—Dr. Robert C. Hood, Clarksburg, addressed the Marion County Medical Society, recently, at Fairmont, on "Recent Progress in Contagious Diseases."

WISCONSIN

Liquor Licenses Revoked.—The district prohibition administrator with headquarters in Chicago recently issued orders, it is reported, revoking the liquor licenses of the following:

Dr. John J. O'Hara, Milwaukee. Dr. Warner B. Strong, Milwaukee.
Dr. Thomas S. Clark, Milwaukee. Dr. Robert S. Milbee, Milwaukee.
Dr. Edward J. Stone, Milwaukee.

Dr. Bushong Appointed Director of Clinic.—The trustees of the Milwaukee County institutions have elected Dr. Roy E. Bushong a member of the staff of the Boston Psychopathic

Hospital, Boston, as director of the new mental hygiene clinic which the county is to establish at Grand Avenue and Fifth Street.

WYOMING

State Medical Election.—At the annual meeting of the Wyoming State Medical Society, July 12-13, Lander, Dr. Vincent J. Keating, Sheridan, was elected president; Drs. Frank A. Mills, Powell, Archie P. Kimball, Casper, and Morrell Goldberg, Kemmerer, vice presidents; Dr. Edwin E. Whedon, Sheridan, secretary, Dr. Evald Olson, Lovell, treasurer, and Dr. George P. Johnston, Cheyenne, delegate to the American Medical Association. The next annual meeting will be held in Cheyenne.

GENERAL

Society News.—At the recent annual meeting of the Western Physiotherapy Association, Dr. Lynne B. Greene, Kansas City, Mo., was elected president, and Dr. Charles W. Fassett, Kansas City, Mo., secretary.

Bill to Pay Donors.—The House Committee on Military Affairs favorably reported a bill to provide payment for blood transfusions which are made to official patients in any government hospital. The measure provides that the sum paid shall not be in excess of $50. The legislation is necessary on account of a ruling made by the comptroller general, who has notified the Secretary of War that the practice of paying donors for blood transfusions must be stopped because there is no authority in existing law for the government to pay for such transfusions.

New County Society Secretaries.—The following physicians have recently been elected secretary of the county medical society indicated:

Dr. Louis Adelsberger, Waterloo, Ill., Monroe County Medical Society.
Dr. Elias M. Akins, Etowah, Tenn., McMinn County Medical Society.
Dr. Arlander A. Barge, Newnan, Ga., Coweta County Medical Society.
Dr. Jessie C. Bennett, Jefferson, Ga., Jackson County Medical Society.
Dr. Martin A. Blanton, Mosheim, Tenn., Greene County Medical Society.
Dr. John C. Cail, Sylvania, Ga., Screven County Medical Society.
Dr. Robert B. Chastain, Calhoun, Ga., Gordon County Medical Society.
Dr. Joshua C. Collins, Collins, Ga., Tattnall County Medical Society.
Dr. Walter Cox, Irvine, Ky., Estill County Medical Society.
Dr. B. Vernon Dickson, Covington, Tenn., Tipton County Medical Society.
Dr. Thomas B. Gay, Jr., Athens, Ga., Clark County Medical Society.
Dr. Robert L. Hamilton, Richmond, Mo., Ray County Medical Society, reelected.
Dr. John A. Hardison, Lewisburg, Tenn., Marshall County Medical Society.
Dr. Thaddeus I. Hawkins, Griffin, Ga., Spalding County Medical Society.
Dr. Earl L. Hendricks, Lanark, Ill., Carroll County Medical Society.
Dr. John W. Johnson, Hayti, Mo., Pemiscot County Medical Society.
Dr. Samuel L. Keller, Waukegan, Ill., Lake County Medical Society.
Dr. Arthur H. Langhoff, Glencoe, Minn., McLeod County Medical Society.
Dr. William R. Martin, Charlotte C. H., Va., Charlotte County Medical Society.
Dr. Charles A. Miller, Princeton, Ind., Gibson County Medical Society.
Dr. Albert O. Meredith, Hartwell, Ga., Hart County Medical Society.
Dr. William H. Murphy, Redwood City, Calif., San Mateo County Medical Society.
Dr. Henry A. Nesbitt, Clarksville, Tenn., Montgomery County Medical Society.
Dr. James B. O'Bannon, Mount Carmel, Ky., Fleming County Medical Society.
Dr. William W. Odom, Lyons, Ga., Toombs County Medical Society.
Dr. Lyman S. Osborne, Fitzgerald, Ga., Ben Hill County Medical Society.
Dr. John G. Potter, Houlton, Me., Aroostook County Medical Society.
Dr. Joseph Preucel, Colfax, Wash., Whitman County Medical Society.
Dr. John A. Rhodes, Crawfordville, Ga., Taliaferro County Medical Society.
Dr. Mary S. Ross, Hannibal, Mo., Marion County Medical Society.
Dr. Benjamin T. Smith, Carnesville, Ga., Franklin County Medical Society.
Dr. Oliver T. Sproull, West Union, Ohio, Adams County Medical Society.
Dr. Philip E. Stangl, St. Cloud, Minn., Stearns-Benton County Medical Society.
Dr. Samuel A. Swayne, Melba, Idaho, Canyon County Medical Society.
Dr. John G. Thoner, Wheeling, W. Va., Ohio County Medical Society.
Dr. Ralph R. Trueblood, Lawrenceville, Ill., Lawrence County Medical Society.

Government Exposes "Remedy" for Infectious Abortion.—In a trial at Cleveland, May 5, the U. S. Department of Agriculture exposed the absurdity of a remedy sold by the Erick Bowman Remedy Company of Owatonna, Minn., for infectious abortion in cattle. It was shown that by repeated analyses the remedy was found to consist almost entirely of brown sugar and ground wheat bran. About 9 pounds of the remedy sold on the market for $5. The court held that the company misbranded its product, and ordered the quantity before the court destroyed; previously, the department of agriculture had seized interstate shipments at various points throughout the country, and had notified the Bowman Company that its product was considered misbranded. Erick Bowman, a farmer in Minnesota, in 1921, asked the department of agriculture to buy his secret formula, and, failing to make the sale, he began manufacturing and selling the mixture to farmers; by 1923, a company had been organized and incorporated, and then an extensive campaign was inaugurated to sell "Bowman's Abortion Remedy." It is said that millions of dollars have been mulcted from farmers by dealers in fake cures for this disease; a greater loss, however, is due to the false security which these "cures" engender among farmers, and thus delay the application of proper methods of sanitation among infected herds before farmers realize that they have been duped. The consensus of authorities on diseases of animals at this trial was that there is no drug known to be of any value whatever in the prevention and cure of contagious abortion in cattle.

FOREIGN

The Laënnec Centennial.—The Académie de médecine at Paris is planning to celebrate the centennial of the death of Laënnec, the father of auscultation, Dec. 13-15, 1926. A new edition of his Traité d'auscultation is to be issued, and additional ceremonies are planned at his former home in Bretagne. M. P. Masson, 120 boul. Saint-Germain, Paris, is the treasurer of the fund being collected for the purpose.

Monument to Physicians.—A monument has been dedicated in Germany at Eisenach in Thuringia in honor of physicians who lost their lives during the World War. The sculptor Prof. Hugo Lederer of Berlin represented Aesculapius; there are also two reliefs illustrating medical aid to wounded soldiers, and two tablets with inscriptions. Eisenach is an old German town in which is the famous statue of Martin Luther by Donndorf.

The Cancer Review.—The first number of the *Cancer Review, A Journal of Abstracts,* published by the British Empire Cancer Campaign, has been received. The name of Sir William Leishman, who died, June 2, 1926, appears as chairman of the management committee, and Dr. Francis Cavers is general editor. Material is grouped under five heads: general; experimental and biochemical; clinical and pathologic; radiologic, and statistical. Little if any apology, write the editors, is required to justify the appearance of a new journal of abstracts in this field. Articles written by trained observers in various departments of medicine, biology, physics and chemistry are constantly appearing and are widely scattered through scientific printed matter. Such material will be rendered much more available by the publication of this new periodical. Its value will be enhanced if authors, editors and publishers will send copies of all their relevant publications to Capt. E. J. C. Chapman, M. C., Secretary, 19 Berkeley Street, London, W. 1. The American agent is William Wood & Co.

Report of Committee on Rheumatism.—The committee appointed by the council of the British Medical Association, January, 1924, "to inquire into the steps which have been and are being taken in relation to the prevention, detection and treatment of cardiac disease in children, and to make proposals in connection therewith," has just submitted its report. Among the most important lines of inquiry considered were the value of tonsillectomy as a means of limiting the injuries inflicted by rheumatic infection, and the present position of after-care of rheumatic children. The report signed on behalf of the subcommittee by Sir Humphry Rolleston acknowledges assistance in collecting material from a number of physicians and associations, and makes the following recommendations:

1. Stricter attention to the prevention of damp in dwelling houses.
2. Further investigation of housing conditions and of the geographic distribution of the disease.
3. Pooling of material for investigation of the bacteriologic aspects of rheumatic infection in childhood.
4. Careful and discriminating use of the operation of tonsillectomy.
5. Rapid expansion of the accommodation available for prolonged institutional care of rheumatic children.

Deaths in Other Countries

Dr. **Oscar Bloch,** emeritus professor of surgery at the University of Copenhagen, one of the editors of the *Hospitalstidende* and one of the founders of the *Nordiskt medicinskt Arkiv,* aged 79.——Dr. **A. Van Beneden,** founder of the Borgoumont public Sanatorium, the first in Belgium, preceding any in France.——**William Henry Clayton Greene,** formerly dean of the Medical College of St. Mary's Hospital, London, England, June 29.——**John Thomson,** consultant to the Royal Hospital for Sick Children, Edinburgh, author of "Clinical Study and Treatment of Sick Children" and many other contributions to the literature of pediatrics, July 2.——Dr. **Karl Oppenheimer** at Munich, aged 62.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 17, 1926.

The Care of Cripples

Sir Robert Jones, emeritus president of the British Orthopaedic Association, gave an address in London on "The Cripple Problem" under the egis of the Essex County Council. He said that the problem of the cripple was a big one. There were 100,000 cripples in the country at the moment, and a large proportion of them were even now becoming steadily worse, for whom big things had to be done, because little things were not done at an early stage. The majority could be made industrial assets by treatment. He asked where cripples come from, and gave four or five big groups which supplied the majority not caused by war: tuberculosis; rickets—a preventable disease; the paralytic group, due directly to infection; congenital defects, such as clubfoot; the industrial group, due to accidents. Concerning the prevention of tuberculous cripples, he said a great deal had been done in the North and there ought to be some means of making it a national scheme and not a local one. Tuberculosis affecting bones, glands and joints was due to infection from bacilli, either bovine or human. Tuberculosis was not hereditary. Congenital tuberculosis was so rare that it was of no account. Sixty out of a hundred cases of bone and joint tuberculosis were due to infection by the bovine bacillus. As to the human bacillus, there should be some means of preventing children from coming in contact with tuberculous people in the active stages of the disease. Patients were sent home from sanatoriums to die, which was a very dangerous thing, and in a room occupied by a tuberculous person the carpet was infected and children playing in the room would become infected. Rickets was absolutely under control and could be prevented by proper diet, sunlight and fresh air. Deformities were common because of want of early treatment and after-care, and whatever scheme was taken up by a county they should fulfil their obligations in the matter of after-care. The hunchback might have escaped his deformity, had it been discovered in infancy and had he been put to lie down and rest in proper surroundings; the clubfoot, if molded into shape when discovered, could have been put right, but left for three or four years was all but incurable. In any scheme adopted, open-air treatment should form a part. The plight of the adult cripple was sad, and in any scheme he urged them to have beds for adults as well as for children. He also urged them not to be too strict about the age when a child ceased to be a child, and to try to keep the young adult cripple so that he might be perfectly recovered when he went out. Dealing with the cost of building a suitable hospital, he said it would not be so very expensive. They would want a hospital of 300 beds with their population of nearly 1,000,000. In regard to after-care clinics, the cost of looking after children in them was about $20 a year, as compared with $650 a year in a hospital.

The White Man in Tropical Australia

The possibility of the permanent occupation of tropical Australia by a healthy, indigenous white race is still a question. More than a third of the commonwealth lies within the tropics, apart from Papua and the mandated territory of New Guinea. A subcommittee was appointed by the Australasian medical congress of 1911 to consider this possibility and the conditions conducive or essential to such occupation. A report was presented by the subcommittee to the congress held at Brisbane in 1920. The members of the subcommittee were "unable to find anything pointing to the existence of inherent or insuperable obstacles in the way of the permanent occupation of tropical Australia by a healthy indigenous white race." They considered that the question was one of applied public health "in the modern sense," and they pointed out that the absence of semicivilized colored peoples from northern Australia simplified the problem considerably. They maintained that organization, staff, time and money were necessary for the formulation and carrying out of any scheme of extensive settlement. The report of the subcommittee was adopted by the congress. At the Sydney session of the pan-Pacific congress in 1923, several important contributions were made in regard to climate and its effect on human efficiency and its relation to tropical settlement. Prof. Griffith Taylor regarded as most suited to a white man the climate that attracted him to close settlement. He pointed out that the wet-bulb thermometer was the best single instrument for indicating the habitability of any region as regards climate. He concluded that a large proportion of white people would not live in localities of great discomfort until the point of saturation had been reached in more attractive regions. Professor Priestly pointed out that no striking observations had been made of alterations in the physiology of persons in the tropics which could be considered the result of climatic influence. At the same time he laid great stress on "the unhappy lot of women folk" in northern Queensland. He referred particularly to the conditions under which they had to work in carrying out household and kitchen duties. He regarded the possibility of settling northern Queensland with a permanent white population as not proven.

The settlement of the white man in the tropics is the subject of a recent important communication by Dr. R. W. Cilento to the commonwealth government. It is a survey of facts and figures affecting the residence of white people in the tropics with observations on house conditions in certain areas. Dr. Cilento contends that life in tropical Australia offers two distinct problems. This area is unique in having "no large native population teeming with disease." It is occupied by thousands of pure-blooded European settlers. Along the eastern coast of Queensland alone these number 103,000. Some of these settlers are of the second and third generation and make up the largest mass of a purely white population settled in any part of the tropical world. They are really carrying out a huge and unconscious experiment in acclimatization. The white man here is not the lord of a native race. He is simply a working man, carrying out every occupation from the most laborious physical to the higher mental. But in the tropical dependencies of Australia (Papua and the mandated territory of New Guinea) the white man is, as everywhere else in the tropical world "a more or less exotic bloom." He is the controller and overseer of labor, he is the administrative official, and he represents an almost negligible superstratum on the great mass of native life. One of the most difficult features of tropical residence is the tendency of the white man to regard this as of only a temporary nature. In northern Queensland this tendency is gradually becoming less, because the main mass of the population is Queensland born.

Dr. Cilento quotes Professor Skertchly. According to Skertchly, the Australian tropical region enjoys a far more favorable climate than much of the extratropical land, and both as regards temperature and rainfall is superior to regions in the same latitude in South America and South Africa. The greater part of tropical Australia, the great western plateau, lies more than a thousand feet above sea level. A moist tropical climate is the result of heavy rainfall with low elevation. Skertchly regards as unsuitable the area that has an annual rainfall of 50 inches and over. This area

extends along the north of Queensland and as far south as the fifteenth degree of latitude. Dr. Cilento points out that this area alone carries a population of many thousands, the overwhelming majority of whom are settled in the hottest and most humid areas. In regard to the effects of residence in the tropics, Dr. Cilento asks what physiologic changes, if any, occur in white races. It has been found by Young that while the body is at rest its temperature does not vary appreciably from that which characterizes it in temperate zones. The temperature rises more quickly after exercise in tropical zones, and subsequently decreases at a slower rate. This is more evident in the newcomer who is not yet acclimatized. In regard to skin color, a black skin is of advantage in that by absorption of heat the body is raised more readily to the sweating point and so to the relief that is experienced at that stage. Of far more importance to the comfort of the person than the actual degree of external temperature or even of humidity is the degree of heat stagnation. With high external temperatures the heat lost by sweat evaporation is the most important factor regulating body temperatures, and this heat loss is proportionate to the amount of air movement. The discomfort experienced by Europeans in the tropics is largely a matter of clothes and house ventilation. Rubner pointed out that there is a layer of stagnant air enclosed between the skin and the clothes. The air layer is charged with heat, with moisture and with the exhalations of the skin and is at all times at a much greater temperature than the external air. For this reason a person wearing close-fitting clothes, whether in the tropics or in a temperate climate, lives always under tropical conditions as far as his clothed body is concerned. The statement is commonly made that life in the tropics leads to an alteration in the blood, and it is not surprising that the lay mind accepts this statement without question. The first thing that strikes a visitor to northern Queensland is the pallor of the women and children. Priestly and Breinl examined the blood of 574 apparently healthy school children in that region ranging from 7 to 15 years of age. The only abnormality discovered was a slight increase in the number of leukocytes. There was no anemia. Dr. Cilento points out that many cases of anemia in the tropics are due to malarial and helminthic infections, and that the common pallor of the healthy tropical resident is due to a tropical ischemia or a heaping up of the surface epithelium, which is of no real significance save as an adaptive protection. Ruddiness in an old tropical resident generally indicates ill health or alcoholism. Dr. Cilento refers to the description by Manson-Bahr of "tropical liver." This begins as a purely physiologic condition, a condition of hyperemia from functional inactivity. When physiologic hyperemia is pushed a step further, congestion and blood stasis result. Climate is obviously only an indirect cause of all this morbidity, and Dr. Cilento points out that faulty habits of living may produce it in any climate.

Dr. Cilento draws two important conclusions: physical exercise is essential for life in the tropics, and preventive medicine must be a foremost factor in every aspect of life and industry. Dr. Cilento discusses the statement frequently made that while women live for short periods in the tropics without suffering permanent harm, yet they cannot bear healthy children and that their fertility is lessened. His investigations disprove this view. He draws attention to the fact that a considerable second generation of tropically born children is rapidly springing up in Queensland. If the northern part of Australia can be kept racially pure and if industries can be made to thrive in every part of the continent, the nation will be the gainer not only in commercial prosperity but also in the type of individual that can be produced. The northern regions are producing a hard and wiry type of man who is capable of great endurance. Dr. Cilento has had great opportunities of observing the North and its people. He has made out a good case for the permanent occupation of the tropics by a white race. But it is evident that life in a humid atmosphere is uncomfortable when compared with life in other places. The North must be made more habitable and attractive. Dr. Cilento concludes that the question of the peopling of the tropics by a white race is largely one of preventive medicine. Malaria, helminthiasis and other diseases are found in the Australian tropics. They can be dealt with and eventually controlled. The general principles of preventive medicine must also be applied.

A New Reason for Preferring Medical Women Officers

On the ground that there are more women and children to be attended to than males, Hastings guardians have appointed a woman medical officer. There was some criticism of the proposal, as it was thought that there would be too many patients for a woman. She would also have to travel in the winter to outlying places and perform operations.

NETHERLANDS

(From Our Regular Correspondent)

July 11, 1926.

Work Colonies for the Tuberculous

The Netherlands society "Zonnestraal" (sunbeam) established recently at Hilversum the first work colony on a rural tract. The society has been given a free lease of this property by the association of diamond cutters.

The Purification of Residual Waters

A Netherlands institute for the purification of residual waters has been experimenting with the waste waters from the cardboard factories at Groningen. Each week, 116,400 cubic meters of residual waters was diverted into the canals in the vicinity of Groningen. A septic ditch was constructed, with eight gas reservoirs, into which part of the residual waters from the factory was allowed to flow. A complete laboratory was established in connection with each of the septic ditches. Fuel for the laboratory apparatus and for the building itself was assured by gas collected in the septic ditches. The results were very satisfactory and another station in a similar industry was established, which not only made it possible to get rid of the waste waters but also supplied a quantity of gas sufficient to drive a 140 horsepower motor, heat the boilers of the factory, and still leave an excess, which is contracted for by the gas works of the locality. Several different stations based on other principles have been established. In paper mills a mechanical procedure consisting of decantation and filtration over a bed of slag has been employed. In dye-works the method used is decantation, together with the application of lime water, ferrous sulphate and aluminum sulphate. The residual waters of dairies and abattoirs are treated by a biologic process, together with the addition of lime, which accelerates considerably the natural saponification of fatty bodies and the disintegration of albuminoid substances.

A Medical Directory

The Hofstad printing establishment has published a list of all medical and therapeutic establishments in the Netherlands, together with a statement of the specialties to which they are devoted.

Dental Mechanics

For some time, there has been a controversy between graduate medical dentists and dental mechanics who have claimed the privilege of practicing dentistry in all its forms. An act passed in 1925 allowed those technicians who had taken up dental work before 1913 to practice all forms of dentistry.

However, licenses have been issued to persons who in 1913 were scarcely 15 years old. Furthermore, some persons so licensed had been waiters in restaurants.

Resignation of Professor Kouwer

Professor Kouwer has resigned from his position as professor of gynecology in the University of Utrecht.

Protection Against Roentgen Rays

A committee of the Council of Hygiene has proposed regulations regarding protection against roentgen rays, not only of technicians but also of persons in the vicinity. The committee recommends governmental authorization for the establishment of a roentgenologic laboratory or for the modification of an existing laboratory. Furthermore, the medical use of roentgen rays should be permitted only to registered physicians. Roentgen rays should not be used otherwise except for certain scientific and technical purposes. Authorization for installation should be given only after an investigation as to the need of it. The committee took up also specialization in roentgenology. A special license for roentgenologists is advocated. The report deals, in several chapters, with the relative value of various methods of protection against roentgen rays. The committee approves the establishment of a standard erythema dose.

The Abuse of Tobacco

In the *Katholiek Sociaal Weekblad*, Van Nispen gives statistics on the use of tobacco in the Netherlands. During 1924, 2,500,000,000 cigarets, representing a cost of 43,000,000 florins, or approximately $17,000,000, were consumed. The use of tobacco by children has grown to an alarming extent. An inquiry has been made and the results are deserving of attention: Of 100 boys of 6 years of age, it was found that thirty smoke. Between the ages of 9 and 10, 50 per cent smoke. Of 250 boys more than 11 years old, 220 were smokers.

Mosquitoes of the Surinam Region

The colonial institute of Amsterdam has published a work by Bonne C. and Bonne J. Webster, members of the colonial institute of Amsterdam, which gives the complete fauna of the mosquitoes of the Surinam region and a study on "neotropical mosquitoes."

JAPAN

(From Our Regular Correspondent)

July 4, 1926.

Revised Factory Law

The revised factory law, which was put into force, July 1, protects minors and mothers mainly in accordance with the agreements made at the international labor conference held at Washington in 1919. According to the new regulations, minor employees must be more than 15 years of age, while their working hours are shortened by an hour to two hours a day. Mothers are allowed four weeks before and six weeks after childbirth. Four more weeks' rest may be obtained on a physician's order. They are allowed to nurse their babies for thirty minutes twice a day.

Confectionery and Nutrition

The Japan Children Society has addressed Dr. Toda, director of the Tokyo health bureau, asking that an investigation be made of the nutritive qualities of confectionery.

Workers' Diseases

In the prefectural factory inspectors' conference held under the auspices of the home department in Tokyo last month, it was decided to investigate diseases of factory workers. Prefectural authorities will be asked for records of all workers who were discnarged on account of illness during the past three years. One object of this is to investigate the health conditions of the discharged and their families.

Plateau Sanatorium

The first plateau sanatorium in this country has been established by Baron Mitsui and other rich men at Fujimi in Nagano prefecture, 1,100 meters above sea level. Dr. Masaki and some other professors of the medical college of the Keio University have been commissioned to superintend affairs there. The establishment is so promising that they are intending to add a few hundred more beds. Hotels, houses to let, and shops near the institution will constitute a plateau city on the site of this out of the way village.

Model Village and Healthy Quarters

The authorities have planned to establish next year a model sanitary village after the fashion of America. Also they will remedy unhealthy quarters in Tokyo and other large cities, for which the government will allow the cities half the expenses of the program for ten years.

Local Stadiums

The authorities in charge of physical culture have advised prefectural governors that public stadiums will be established in their prefectures. Also, the authorities will assist the governors in giving courses of lectures on athletics, showing films about sports and games, and coaching local athletic sports. Athletes may enter the annual athletic meeting of the Meiji shrine.

Cases of Infectious Disease

The cases of infectious disease in this country for the period from March 28 to May 22 were as follows: typhoid, 3,312; diphtheria, 2,196; dysentery, 762; smallpox, 616; scarlet fever, 384; paratyphoid, 279; meningitis, 62; typhus, 30.

French Physician's Monument

About eighty years ago, when this country was still closed to foreign trade, a Western sailing ship cast anchor in the harbor of Naha, one of the Liu Chiu islands. The ship soon cleared from the port, leaving a Westerner with his dog on the beach. The officials of the island confined him in the Gokokuji Buddhist temple in the town. When after nine years he was set free, he devoted himself to the cure of the sick, and to the propagation of Christianity. He also lectured on the outlines of Western medicine to the herb doctors in the neighborhood, and taught them vaccination. Monsieur Bertheim was the name of this French missionary and physician. This year a monument to his memory was unveiled in the compound of the Gokukuji temple.

Sanitary Exhibition

The Sanitary Association will hold a sanitary exhibition in Osaka, July 15 to August 31. A special feature of the exhibition will be a military ambulance airplane from the Tokorozawa aerodrome. Another unusual exhibit will be a revolving stage showing three scenes all concerning poison gases: (*a*) an orchard and certain industries utilizing gases in peace times; (*b*) a tragic battlefield scene including a display of safety devices against gas, and (*c*) a part of a building devoted to antipoison gas measures, including medical equipment for the cure of poison gas injuries.

Army Venereal Disease Prophylaxis Work

Since cases of venereal disease in the army are increasing, the military medical bureau has come to the conclusion that soldiers should be furnished with prophylactic medicines when they go out of barracks on holidays. It is recommended also that regiments improve the soldiers' recreation facilities that they may be kept away from prostitutes.

VIENNA

(From Our Regular Correspondent)

July 7, 1926.

The Medicolegal Aspects of Blood Comparison

In the Medicolegal Institute, Prof. Dr. Sperl discussed recently the problem of blood comparison. The discovery of the four human blood groups is beginning to be recognized in the law courts. In the case reports of all Austrian hospitals, the blood group to which each patient belongs must be recorded. In questions of paternity, the blood test may be accepted only as indicatory evidence. The blood test is much more important for the diagnosis of blood stains. When blood stains are found on clothing in connection with a supposed crime, the defendant usually attributes them to slight injuries, to nosebleed or to domestic animals. In such cases the blood test will often determine whether the blood stain in question was caused by the defendant's own blood. To be sure, the blood group sometimes cannot be determined because the blood stain has been damaged by subsequent happenings. The establishment of the blood group should be made only by competent experts. Many cases have been reopened lately because persons who, many years ago, were adjudged fathers of certain children and have been compelled to contribute to their support, although they denied they were the fathers, could now point to the fact that at the time of their trial this new diagnostic method was not known.

Treatment of Overweight

In lectures of a graduate course, Professor Schlesinger and Dr. Pollak recently discussed modern methods of reducing fatness. In many cases the obesity is due only in part to fat deposits, and in great part to excessive water content of the tissues, even though edema is not present. There is usually a decreased urine output with lessened sodium chloride excretion. The first thing to do in such cases is to reduce the water content of the tissues. Thyroid administration, carefully controlled, often has good effect (Professor Eppinger's method). Reduction of the fluid intake and a diet poor in salt are indicated; also merbaphen as a so-called tissue diuretic is satisfactory; digitalis and theobromine are not effective. "Tissue diuretics," however, may have a toxic effect. A modified protein-fat diet with restricted carbohydrate and fat will often prove efficacious, the quantity of protein being relatively large. This stimulates also the endocrine glands, which often are functioning deficiently. Changes in the diet and the introduction of vegetable days and milk days are advantageous. An increasing amount of muscular work or physical exercise should be prescribed. With the exception of thyroid preparations, organotherapy has not been found effective. The value of the water-drinking treatment (Carlsbad, Marienbad) lies chiefly in the diet observed during its course, the improvement in intestinal activity and the increased urine output. Then, again, patients who drink a great deal of water are satisfied with less food. Ingestion of "roughage" (cellulose) satisfies hunger without providing much nutriment.

The Iodine Content of Thyroid Preparations

Complaints have arisen in regard to the unreliable character of thyroid preparations. Thyroxin, a triply iodized and triply hydrated derivative of indol, is regarded as the active principle of the thyroid gland. Some have considered the iodine content as of secondary importance, but in recent years the thyroid activity has been regarded as due in great measure to the iodine content. Dr. Liebesny has ascertained the iodine content of sixteen different thyroid preparations from nine different pharmaceutic houses. He found this quantity to range from zero to 0.384 mg. per tablet. He discovered that the tablets in a given lot varied greatly. A 0.1 Gm. tablet contained more iodine than the 0.3 Gm. tablet offered by the same firm, and the 0.5 Gm. tablet did not contain five times as much iodine as the 0.1 Gm. tablet but only from 1.2 to 1.6 times as much. No definite relationship can be established between a given quantity of fresh thyroid gland and the quantity of iodine present. This fact will be understood, since the researches of Fenger and Seidel show that the iodine content of the glands of cattle, pigs and sheep vary with the seasons. Since the physician must know what amount of iodine he is administering to the patient, a standard tablet is needed. Dr. Lenk has succeeded in producing thyroid tablets with a constant iodine content (0.2 mg). Trials with such tablets, the iodine content of which has been accurately determined, have been made in Vienna during the past two years, and have showed that the desired results may be accomplished.

BERLIN

(From Our Regular Correspondent)

July 10, 1926.

The Fiftieth Anniversary of the Federal Public Health Service

June 30, the Reichsgesundheitsamt, or federal public health bureau, celebrated its fiftieth anniversary. It was for a long time the only federal board in the field of public health service. As recently as 1918, a special subdepartment of public health was created within the federal ministry of the interior, under the directorship of a former representative of the Reichsgesundheitsamt. Germany has no federal ministry of public health, in accordance with the historical development of the German reich. The German reich is a federation composed of several states, each of which has its own government. Before the revolution, every state had its own ruling monarch. Since the revolution, every state has been administered by a group that has its center in the parliament. The enactment of laws and their execution rest with the officials of the individual states. Consequently a federal board with executive rights could not be created. The Reichsgesundheitsamt, or, as it was called before the revolution, the Kaiserliches Gesundheitsamt, had, and still has, only an advisory character. It is under the immediate control of the chancellor of the reich. When it was founded, a medical man was placed at the head of it; namely, Bismarck's physician. He was succeeded in a few years by a jurist, and his successor was also a jurist, Bumm (the brother of the Berlin gynecologist of that name, now deceased). Bumm directed the Reichsgesundheitsamt for more than twenty years, until he reached the age limit (65 years). Since his resignation, June 30, another medical man, in compliance with the wishes of the medical profession, heads the bureau. Dr. Hamel, the present occupant of the office, had been, since 1918, the medical representative in the subdepartment for public health service associated with the federal ministry of the interior. He had been also a member of the Reichsgesundheitsamt, and has contributed valuable articles on the public health service, especially in the crusade against tuberculosis.

The importance of the Reichsgesundheitsamt is illustrated by the fact that, only a few years after its creation, Robert Koch was appointed an investigator in the bureau. After a short time, he found the tubercle bacillus, and through him and his collaborators Löffler and Gaffky the bacilli of cholera, diphtheria, typhoid and glanders were discovered. The researches of Koch on disinfection and wound treatment also are deserving of mention. Of similar importance was the discovery of the spirochete of syphilis by Schaudinn during his researches in the Reichsgesundheitsamt. In addition, the Reichsgesundheitsamt promoted public health in Germany to a wide extent. Not a single law in this field was passed without the cooperation and the preliminary investigations of this bureau.

The Reichsgesundheitsamt had originally three laboratories: a chemical, hygienic and bacteriologic laboratory; a toxicologic-pharmacologic laboratory, and a physicochemical laboratory. The last two mentioned are grouped together under the name of the department of natural sciences. In recent years an industrial-hygienic laboratory has been added. There is also a department for studies in the field of general plant culture, with botanic, zoological and bacteriologic laboratories, and a laboratory of agricultural chemistry, for which an experiment station has been established in a suburb of Berlin. About twenty years ago, this department was placed under an independent federal board and given the name of Biologische Anstalt für Land- und Forstwirtschaft.

On the occasion of the fiftieth anniversary of the Reichsgesundheitsamt, the ministry of the interior established a fund of 100,000 marks for the scientific aid of members of the bureau. Furthermore, certain agricultural leagues whose aim and work are closely associated with those of the Gesundheitsamt created a fund of 28,000 marks in recognition of the services of the former director Bumm, who is to have control of the fund. This money may be used for either the scientific or the economic aid of members of the Reichsgesundheitsamt.

Public Marriage Consultation Center

In June, a public marriage consultation center was opened by the municipal administration in the first district of Berlin. Candidates for marriage are advised as to their adaptability from the standpoint of health, while married persons may consult the staff with regard to their adaptability as parents from the standpoint of heredity. Advice is given also in difficulties of a sexual nature, as well as in matters pertaining to the propagation of the race. Treatment is not given. If desired, candidates for marriage are issued health certificates. The personnel of the marriage consultation center is under oath not to divulge information pertaining to persons who come for consultation. No charge is made for consultation, examination or certificates.

Marriages

WILLIAM HENRY SEBRELL, JR., New Orleans, to Miss Margaret Shirley Bruffey of Charlottesville, Va., June 19.

ANDREW STEPHENS GRAHAM, Columbia, S. C., to Miss Nancy Hart Gordon of University, Va., June 26.

DOUGLAS VANDER HOOF to Mrs. Nancy Selden Habliston, both of Richmond, Va., at New York, June 22.

PAUL P. YOUNGBERG, Cambridge, Mass., to Miss Mable Eleanor Arnell of Rock Island, Ill., June 30.

WILLIAM IRVINE OWENS, Pulaski, Va., to Miss Gertrude Emberson of New Rochelle, N. Y., June 22.

GILMER GUSTAVE HOLLAND, Holland, Va., to Miss Grace Hannah Bailey of Farmville, June 25.

RICHARD ALFRED BOWEN, II, to Miss Elmira Peace Ruffin, both of Richmond, Va., June 23.

WILLIAM DAVID HAGGARD to Miss Lucile Polk Holman, both of Nashville, Tenn., July 27.

BERNARD W. LEONARD, Richmond, Va., to Miss Ruth Dyer of Portland, Maine, in June.

MERLE Q. HOWARD, Wauwatosa, Wis., to Miss Anita Clark of Berkeley, Calif., July 17.

GEORGE OZEN MARTIN, Cullen, Va., to Miss Mary Elizabeth Ballou of Richmond, June 7.

CLYDE J. SMILES to Miss Esther Peterson, both of Ashland, Wis., at Madison, June 1.

CHARLES LOUIS RUDASILL, Richmond, Va., to Miss Aline Beville of Crewe, June 30.

GEORGE J. C. LARSON to Miss Mabel A. Holthousen, both of St. Louis, July 20.

WILLIAM CHANEY to Miss Leila Wade, both of Memphis, Tenn., June 3.

Deaths

Herbert Howard Cushing, Philadelphia; University of Munich, Germany, 1898; Jefferson Medical College of Philadelphia, 1899; member of the Medical Society of the State of Pennsylvania; instructor in zoology, University of Pennsylvania; formerly associate professor of anatomy, Temple University Department of Medicine, Philadelphia; associate professor of anatomy and director of the laboratory of histology and embryology, Woman's Medical College; professor of practical anatomy, Medico-Chirurgical College of Philadelphia, and the University of Pennsylvania School of Medicine; translator from German into English of Bohm, Davidoff and Huber's Text-Book on Histology; aged 54; died, July 3, at the University Hospital, of uremia.

Isaac Wellington Faison, Charlotte, N. C.; Bellevue Hospital Medical College, New York, 1878; member and past president of the Medical Society of North Carolina; formerly professor of pediatrics and clinical medicine, North Carolina Medical College; at one time on the staffs of the Good Samaritan and Presbyterian hospitals; aged 73; died, July 9, of carcinoma of the prostate.

John C. Swindle, Walnut Ridge, Ark; University of Louisville (Ky.) School of Medicine, 1910; member of the Arkansas Medical Society; president and for many years member of the Arkansas State Board of Medical Examiners; served during the World War; aged 44; died, July 10, at the Methodist Hospital, Memphis, Tenn., of pulmonary embolism following a cholecystectomy.

Owen Meredith Knox ✠ St. Petersburg, Fla.; Illinois Medican College, Chicago, 1907; formerly a practitioner in Chicago; past president of the Pinellas County Medical Society; served during the World War; aged 42; died, July 15, at Chateau Thierry, France, of a skull fracture received in an automobile accident.

Henry Fox Hewes ✠ Boston; Medical School of Harvard University, Boston, 1895; formerly instructor in theory, practice of physic and medicine at his alma mater; on the staffs of the Massachusetts General Hospital and the Massachusetts Eye and Ear Infirmary; aged 58; died, July 8, of cerebral hemorrhage.

Laurel Elmer Youmans ✠ Mukwonago, Wis.; Rush Medical College, Chicago, 1890; formerly member of the state legislature; director and at one time president of the Citizens' Bank of Mukwonago; served during the World War; aged 63; died, July 7, at Milwaukee, of carcinoma.

Benjamin Rush Logie, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1890; member of the Medical Society of the District of Columbia, and the Washington (D. C.) Society for Nervous and Mental Diseases; aged 58; died, April 12, of arteriosclerosis.

James Moore Barton, Atlantic City, N. J.; Jefferson Medical College of Philadelphia, 1868; member of the American Surgical Association; formerly on the staffs of the Charity Hospital and the German Hospital (now the Lankenau Hospital), Philadelphia; aged 80; died, June 28.

Volney McReynolds Schowalter, Fairhope, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1890; member of the Medical Association of Alabama; past president of the Baldwin County Medical Society; formerly county health officer; aged 57; died, June 29.

Fred A. Christenson, Seattle, Wash.; Central College of Physicians and Surgeons, Indianapolis, 1895; member of the Washington State Medical Association; formerly postmaster of Lake Mills, Iowa; aged 59; died, July 3, of cerebral hemorrhage and myocarditis.

Robert Lanning Lounsberry ✠ Binghamton, N. Y.; Medical Department of the University of the City of New York, 1880; medical director of the Security Mutual Life Insurance Company; aged 57; died, July 8, while on a train at Adams, Wis., of cerebral hemorrhage.

Frederick Abbott Goodwin, Binghamton, N. Y.; University of Vermont College of Medicine, Burlington, 1887; Medical Department of Columbia College, New York, 1888; member of the Medical Society of the State of New York; aged 61; died, April 23.

John E. Lee, Haskell, Okla.; Bellevue Hospital Medical College, New York, 1893; member of the Oklahoma State Medical Association; for many years city health officer;

aged 59; died, May 23, from the effects of carbon monoxide gas poisoning.

Charles Francis Hawley ⊕ Bisbee, Ariz.; Chicago Homeopathic Medical College, 1897; formerly member of the state board of medical examiners; county physician; on the staff of the Copper Queen Hospital, where he died, May 22, aged 55.

Nelson L. North ⊕ Brooklyn; Medical Department of Columbia College, New York, 1886; member of the Brooklyn Ophthalmological Society; formerly on the staff of the Brooklyn Eye and Ear Hospital; aged 61; died, July 13.

Thomas Francis Carroll, Lowell, Mass.; Medical School of Harvard University, Boston, 1888; member of the Massachusetts Medical Society; for nine years member of the board of health; aged 62; died, July 10, of heart disease.

William Leachman Lemon, Cleveland; Ohio Medical University, Columbus, 1897; member of the Ohio State Medical Association; also a minister; aged 62; died, July 9, at the Woman's Hospital, following a cholecystectomy.

Luther Ebert Mitchell, Edgerton, Wyo.; University of Colorado School of Medicine, Denver, 1912; member of the Wyoming State Medical Society; served during the World War; aged 39; died, in June, of pneumonia.

Edgar Chetwyn Beaumont, San Saba, Texas; Fort Worth School of Medicine, Medical Department of Fort Worth University, 1905; member of the State Medical Association of Texas; aged 42; died, April 16, of uremia.

William Lindsay Medling ⊕ Dyer, Tenn.; Vanderbilt University School of Medicine, Nashville, 1904; aged 48; died, July 6, at the Baptist Memorial Hospital, Memphis, following an operation for removal of the spleen.

Harry Clay Stinson, Dermott, Ark.; University of Louisville School of Medicine, 1881; formerly superintendent of the State Hospital for Nervous Diseases, Little Rock; aged 72; died, June 15, of heart disease.

Oliver C. Heffner ⊕ Pottstown, Pa.; Jefferson Medical College of Philadelphia, 1885; past president of the Montgomery County Medical Society; on the staff of the Pottstown Hospital; aged 70; died, June 14.

Lemuel J. Sharp, Commerce, Ga.; Medical College of Ohio, Cincinnati, 1883; member of the Medical Association of Georgia; aged 64; died, July 6, at a hospital in Baltimore, of carcinoma of the pancreas.

George Newton Best, Rosemont, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1875; member of the Medical Society of New Jersey; also a botanist; aged 80; died, June 18, of myocarditis.

Readding Lloyd Williams ⊕ Norfolk, Va.; Medical Department of the Tulane University of Louisiana, New Orleans, 1898; served during the World War; aged 59; died, June 22, of cerebral hemorrhage.

Isaiah P. Gunby, Seattle, Wash.; Medical Department of the Tulane University of Louisiana, New Orleans, 1884; member of the Washington State Medical Association; aged 62; died, in June.

George Baptiste Witt ⊕ Newark, N. J.; University and Bellevue Hospital Medical College, 1908; on the staff of St. James' Hospital, where he died, July 10, of intestinal obstruction, aged 43.

Alison Cumming, Vancouver, B. C.; McGill University Faculty of Medicine, Montreal, Que., 1905; on the staff of the Vancouver General Hospital; aged 47; died, June 5, of pernicious anemia.

Joseph E. MacKenzie, Amsterdam, N. Y.; New York Homeopathic Medical College and Hospital, 1892; aged 63; died, March 29, at Rochester, of arteriosclerosis and myocarditis.

Leonard E. Ladd, Van Wert, Ohio; College of Physicians and Surgeons, Baltimore, 1881; member of the Ohio State Medical Association; aged 68; died, July 8, of angina pectoris.

Frank Eaton, East Weare, N. H.; Dartmouth Medical School, Hanover, 1877; member of the New Hampshire Medical Society; aged 75; died, May 22, at Ossipie, of heart disease.

Samuel McCallum, Thornbury, Ont., Canada; University of Toronto Faculty of Medicine, 1899; coroner of the Thornbury District; member of the school board; aged 53; died, May 1.

Samuel Whelpley Gibbs, Fall River, Mass.; Dartmouth Medical School, Hanover, 1890; aged 71; died, April 25, of chronic myocarditis and chronic interstitial nephritis.

William Henry Jenkins, Denver; Medico-Chirurgical College of Kansas City, Mo., 1900; aged 52; died, June 19, at St. Anthony's Hospital, of acute nephritis and uremia.

Edwin Zimmerman, New York; University of Maryland School of Medicine, Baltimore, 1879; aged 68; died, July 9, following an operation for carcinoma of the throat.

William A. Germain, Sioux Falls, S. D.; Medical College of Indiana, Indianapolis, 1882; past president of state board of health; aged 71; died, July 5, of heart disease.

Beauford Edmond Avritt, Bradfordsville, Ky.; University of Louisville School of Medicine, 1873; aged 87; died, July 8, at the Elizabeth's Hospital, Lebanon, of senility.

James Calvin Harris ⊕ Reidsville, Ga.; Atlanta School of Medicine, 1909; president of the Tattnall-Evans County Medical Society; aged 58; died, June 26, at Atlanta.

Basil Ernest Swiger, New Martinsville, W. Va.; Baltimore Medical College, 1905; aged 47; died, May 23, at the Wetzel County Hospital, of interstitial nephritis.

Richard Cloward Casselberry, Chester, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1903; aged 49; died, recently, following an appendectomy.

Anthony Leo Lutz ⊕ St. Louis; Washington University School of Medicine, St. Louis, 1912; aged 49; died, July 4, at Carthage, of carcinoma of the rectum.

Stephen Stoddard Stone, Ridgely, Md.; University of Maryland School of Medicine, Baltimore, 1894; aged 58; died, May 24, of chronic interstitial nephritis.

Samuel R. Wilson, Rossville, Ill.; University of Louisville School of Medicine, 1881; aged 67; died, July 4, at the Lakeview Hospital, Danville, of uremia.

James A. Barkalow, Rose Hill, Kan.; College of Physicians and Surgeons, Keokuk, 1881; aged 70; died, March 7, at Wichita, of cerebral hemorrhage.

Zenas H. Going, Chicago; Rush Medical College, Chicago, 1874; member of the Illinois State Medical Society; aged 77; died, July 2, of angina pectoris.

Benedict J. Ludwig, St. Louis; Marion-Sims College of Medicine, St. Louis, 1896; aged 60; died, July 8, of cerebral embolism and arteriosclerosis.

John W. Veach, Youngstown, Ohio; Cleveland Medical College, 1892; member of the Ohio State Medical Association; aged 60; died, July 8.

Henry N. Willis, Wilmington, Del.; University of Maryland School of Medicine, Baltimore, 1888; aged 60; died, April 11, of myocarditis.

Horace Vivian Pearman, Halifax, N. S., Canada; McGill University Faculty of Medicine, Montreal, Que., 1888; died, April 23, at Wolfville.

Henry P. Feaster, Delaware, Ohio; Eclectic Medical Institute, Cincinnati, 1890; aged 65; died, June 25, at St. Augustine, Fla., of heart disease.

Floyd Arthur Pingree ⊕ Elgin, Ill.; Hahnemann Medical College and Hospital, Chicago, 1920; aged 31; died, July 3, of acute appendicitis.

George Parsons Bell ⊕ Ulysses, Kan.; Bellevue Hospital Medical College, New York, 1886; aged 67; died, July 8, of cerebral hemorrhage.

Benjamin F. Bond, Vermilion, Ohio; Detroit Homeopathic Medical College, 1873; aged 92; died, June 24, of prostatitis and general debility.

Charles Edward Turner, Bishop, Calif.; Cooper Medical College, San Francisco, 1894; aged 59; died, June 17, following a long illness.

Harold Francis Simon ⊕ Winchester, Mass.; Boston University School of Medicine, 1904; aged 44; died, July 6, of heart disease.

Benjamin Philander Hooker, Russellville, Ky.; University of Nashville Medical Department, 1867; aged 88; died, July 2, of senility.

Isaac Somers Berrey, Batchtown, Ill.; Missouri Medical College, St. Louis, 1882; aged 69; died, July 9, of bulbar paralysis.

Chris T. Grinstead, Glasgow, Ky.; University of Louisville School of Medicine, 1868; aged 84; died, June 20, of angina pectoris.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

SILVER PROTEIN PREPARATIONS

Market Specimens That Have Been Found to Comply With New U. S. Pharmacopeia Standards

[REPORT OF THE A. M. A. CHEMICAL LABORATORY]

The Council on Pharmacy and Chemistry requested the Chemical Laboratory of the American Medical Association to examine the silver protein preparations that had been found acceptable for inclusion in New and Nonofficial Remedies in order to determine whether or not they complied with the new standards required by the United States Pharmacopeia X. Original samples of each of the following preparations were purchased on the open market:

ARGYN (The Abbott Laboratories)
ARGYROL (A. C. Barnes Co.)
CARGENTOS (H. K. Mulford Co.)
SILVOL (Parke, Davis & Company)
SOLARGENTUM (E. R. Squibb & Sons)
VARGOL (Heyden Chemical Company)
PROGANOL (Heyden Chemical Company)
PROTARGENTUM (E. R. Squibb & Sons)
PROTARGOL (Winthrop Chemical Company)

In the tenth edition of the U. S. Pharmacopeia the principal criteria for the control and purity of these substances are silver content and the yeast fermentation inhibition as worked out by Pilcher and Sollmann.[1] The results of the silver determinations are recorded in the following table:

SILVER DETERMINATIONS

STRONG SILVER PROTEIN TYPE

	Content Found	N. N. R. 1925 Claims	U. S. P.
Proganol	8.7	Not less than 8.3 per cent.	7.5-8.5
Protargentum	8.6	About 8.3 per cent.	7.5-8.5
Protargol	8.4	Not less than 8.3 per cent.	7.5-8.5

MILD SILVER PROTEIN TYPE

	Content Found	N. N. R. 1925 Claims	U. S. P. X
Argyn	26.3	25-30 per cent.	19-25
Argyrol	19.4	20-25 per cent.	19-25
Cargentos	20.2	20-25 per cent.	19-25
Silvol	19.9	About 20 per cent.	19-25
Solargentum	19.5	19-23 per cent.	19-25
Vargol	21.8	Not less than 20 per cent.	19-25

YEAST FERMENTATION DETERMINATIONS

All of the preparations passed the yeast fermentation inhibition test as described by the U. S. Pharmacopeia X, except Cargentos and Vargol. Of these Cargentos was only slightly stronger than the limit imposed by the U. S. Pharmacopeia X, and Vargol was eight times too strong.

On writing the Heyden Chemical Company in reference to Vargol, the company replied that it was withdrawing Vargol from the market and supplying a product under the name adopted by the new U. S. Pharmacopeia, viz., "Silver Protein Mild" which answers all of the requirements of the U. S. Pharmacopeia X.

Cargentos was so close to the requirement of the U. S. Pharmacopeia X that the variation was not considered sufficient to exclude the product from the U. S. Pharmacopeia X classification.

The manufacturers of Argyn (The Abbott Laboratories) informed the Council that the variation of silver content of Argyn was being reduced so that the product now complies with the U. S. Pharmacopeia in this respect.

SUMMARY

All of the market specimens of the silver protein preparations both mild (Argyrol type) and strong (Protargol type) described in New and Nonofficial Remedies were examined and were found to comply with the new U. S. Pharmacopeia standards for these preparations.

1. See Editorial "Classification of Mercurials," J. A. M. A., July 24, 1926, p. 246.

Correspondence

NONTUBERCULOUS PERIBRONCHITIS

To the Editor:—In reading Dr. Meader's article (THE JOURNAL, July 17) on "Nontuberculous Peribronchitis Simulating Occult Tuberculosis," it occurred to me as strange that no reference was made to aspergillosis or other infection by fungi, which certainly must be ruled out in any differential diagnosis in these patients who exhibit a condition such as he describes. None of those participating in the discussion brought up the point. The occurrence of fungus infestation, while rare, is not to be overlooked. Brilliant results follow potassium iodide administration. Sometimes at any rate, the condition is ameliorated.

THOMAS I. O'DRAIN, M.D., Philadelphia.

SURGERY IN HOT WEATHER

To the Editor:—I should like to offer the following hot weather suggestion: In one of the hospitals with which I am connected, the practice of applying an ice bag about the neck of the surgeon in the operating room has been found very practicable during the hot weather months. The ice bag should be covered with gauze or a towel to prevent any water of condensation from dropping into the field of operation. The operator is much more comfortable and perspires much less, and his face and neck require much less "mopping" than under ordinary circumstances.

SAMUEL IGLAUER, M.D., Cincinnati.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF LEMON JUICE

To the Editor:—1. What is the real effect of lemon juice on the hair, as it is commonly used in the so-called lemon rinse? 2. Is there any soundness in the theory that lemon juice or fruit beverages in which lemon juice is used, such as the common lemonades or lemon punches (nonalcoholic), have a cooling effect? I seem to remember that in a case of erysipelas in our family in the early days cream of tartar was given to "cool the blood." Was this merely a superstition or has it a basis in fact?

A. B., New York.

ANSWER. 1.—Lemon juice has none of the effects on the hair that are claimed for it in cosmetics. It does not lighten the hair; it does not make the removal of soap or grease easier from the hair; nor does it "cut." It is of no use for dandruff or scalp diseases.

2. Acidulous drinks were formerly classified as "refrigerants," because they made the fever patient feel cooler. They do this just as a similar drink on a hot day refreshes a normal person. That they do not really reduce temperature and "cool the blood" was unknown in the days prior to the use of the clinical thermometer. At present the idea is a relic of bygone days; i. e., a superstition.

LIME INFILTRATIONS OF THE CORNEA

To the Editor:—Is there some solution that will help remove lime infiltrations of the cornea? It seems to me that I saw this in THE JOURNAL recently, but I cannot find it.

M.D., Washington.

ANSWER.—If the patient is seen within a few minutes after the lime has attacked the eye, copious irrigations with ordinary cow's milk have been of value in preventing destructive after-influences of lime burns of the eye. One man reported that intramuscular injections of sodium cacodylate were beneficial in lessening lime infiltrations of the cornea, but this has never been substantiated by others. Part of the lime infiltration of the cornea is due to a deposit of calcium carbonate particles within the corneal stroma, and the more

superficial particles may be absorbed by Guillery's method. This consists in anesthetizing the eye and then soaking it for half an hour to one hour daily in a bath consisting of ammonium chloride, 20 Gm.; tartaric acid, 0.05 Gm.; distilled water, 100 cc. For the first five days, one part of the wash is used to ten parts of distilled water. Every five days the dilution is decreased by one tenth until the wash is used full strength. In using the wash, an ordinary glass eye cup is half filled with the wash; it is then fitted over the eye while the head is bent forward, and the head is thrown back and the eye opened. Surgical removal of the superficial particles is the only other way of improving the condition.

WASSERMANN TEST ON MENSTRUAL BLOOD

To the Editor:—There are times when it is exceedingly difficult to get a specimen of blood from a woman for a Wassermann test. Can a satisfactory reaction be obtained from a specimen of menstrual blood? (Please omit name.)

M.D., Connecticut.

ANSWER.—There is little evidence in the literature of Wassermann work on menstrual blood. In one case in which it was done, a negative result was obtained. The patient had no clinical evidence of syphilis. However, the serum was very red and mixed with a large amount of mucus, so the material could not be considered useful for giving a reliable result. Glandular secretions are apt to be mixed with the menstrual blood and the specimen is apt to be red from broken down corpuscles, and both factors may introduce error. Kolmer and others have shown that saliva and milk, which are both of glandular origin, give unsatisfactory results because of a high degree of anticomplementary value, and only a small percentage of positives are obtained in markedly syphilitic cases. Fluids, however, of blood origin, as ascitic fluid, blister fluid or pleural fluid, give a satisfactory Wassermann reaction.

The menstrual flow in many women would not be sufficient for securing more satisfactory amounts of blood than could more easily be procured in other ways. It is rarely difficult to get blood from a vein, either an arm vein or from the hand or ankle. In a difficult case it can be easily obtained by puncturing the ear, tip of finger or heel.

PHYSICIANS AS CORONERS

To the Editor:—I have taken this matter up with the local state secretary, and he advised me to write you for as much information as you could give me; there was much he did not know. 1. How many states require the coroner to be a physician? 2. What percentage of states make it a practice to use physicians when they can get them? 3. What advantage would it be to the county to employ a physician? 4. Can a physician act in postmortem work and charge for his services if he is the coroner? 5. If the coroner is a physician and he decides the cause of death, will it be necessary to have an inquest? Would his opinion be sufficient and overrule the state's attorney?

HARRY F. SMITH, M.D., Racine, Wis.

ANSWER.—1. This could be ascertained only by a study of the statutes of the several states, which is impracticable.

2. This information cannot be obtained at all, as it involves a knowledge, not only of the laws of the states, but of the availability of physicians for coronerships, and the practices of the electorates of the various states and counties.

3. See the following:

White, C. S.: The Relation of the Physician to the Coroner's Office, *Washington M. Annals* **14**: 242, 1915.

Wadsworth, W. S.: The Coroner and the Physician, *New York M. J.* **103**: 400 (Feb. 26) 1916.

Spencer, W. G.: Discussion on the Relationship Between Coroners and Medical Men, *Tr. M. Soc.* London **32**: 262, 1909.

Norris, C. C.: The Office of Chief Medical Examiner: Its Relation to the Public, the District Attorney's Office and the Medical Profession, *New York M. J.* **19**: 189, 1919.

Ashley, C. R.: The Relation of the Physician to the Coroner's Office, *Tr. Luzerne County M. Soc.*, 1919, Wilkes-Barre **21**: 111, 1920.

4. This would depend on the laws of the jurisdiction. Unless expressly authorized by statute, he probably could not. The postmortem examinations contemplated are probably those that would have to be made under the supervision and control of the coroner, and it would be against public policy for a coroner to employ himself, supervise his own work, and approve his own bills.

5. The laws of the jurisdiction determine when an inquest is and is not necessary. Ordinarily the coroner is not subject to the jurisdiction of the state's attorney, but the action by the coroner does not prevent the state's attorney from investigating a case through his own agents or through the grand jury, if he so desires.

AVERAGE AGE OF DEATH OF PHYSICIANS

To the Editor:—I am trying to find the average age at death of professional men. I have asked the census bureau and it has nothing recent. I want it for comparative purposes. I wonder whether you know of any available data. The insurance companies have nothing apparently. I wonder whether it would be possible to get without much trouble the age at death of physicians who have died since 1900, say even the members of the American Medical Association.

JAMES J. WALSH, M.D., New York.

ANSWER.—In the tabulation that follows are given the average ages of physicians at time of death, as reported in THE JOURNAL:

Year	Number of Deaths with Ages Reported	Average Age at Death
1900	650	58.35
1905	1,609	60.34
1910	2,180	60.46
1915	2,269	60.45
1920	2,211	61.09
1925	2,370	62.12

The fraction of years in these averages means nothing, and it is doubtful whether the slight difference in the average of 1905 and that of 1920 means much. THE JOURNAL reports ages only in years completed. A man 40 years and 10 months old would appear in THE JOURNAL as 40 years old when he died; so would a man 40 years and 2 months old. Their average age in this sort of summary would appear as 40, when actually the average would be 40.5. And so with the total number in a year, the months we do not add might account for the small difference we found.

MEASUREMENT OF ROENTGEN-RAY DOSAGE

To the Editor:—In Queries and Minor Notes (THE JOURNAL, July 10), in reply to Dr. McAmis, you give a roentgen ray erythema time of "approximately five minutes" for the factors 7 inch spark gap, 5 milliamperes and 20 inch target skin distance. I do not know how you have arrived at this time but, according to Witherbee and Remer, for unfiltered roentgen-ray dosage

$$\frac{\text{Sp. G.} \times \text{Ma.} \times \text{T}}{\text{Distance squared}} = \frac{45}{64}$$

Taking the factors given, and working out the time, one arrives at an erythema time of about eight minutes. Your ratio between the 10 inch and 20 inch target skin distance is, of course, correct on the law of inverse square, but the 10 inch erythema time should then be one fourth of eight minutes instead of one fourth of five minutes. I note that you do not answer the query with regard to the aluminum filtration and, perhaps, wisely, as there is, so far as I know, no generally accepted formula for calculating filtered dosage.

It should be emphasized, I think, always in giving dosage formulas that the output of tubes and machines varies considerably, especially with unfiltered ray; that meters are often inaccurate and that estimations of point spark gap depend on many things, including altitude, the sharpness of the points and the personal equation of the operator, and are, therefore, notoriously inaccurate.

It would probably be a safer plan for the inexperienced operator to take a minimum dose, known to be suberythema, as a starter, and perform some biologic test with his own apparatus, and then base his treatment routine on the biologic study, which will possibly hold as long as there is no change in transformer, tube or line conditions.

CHARLES D. ENFIELD, M.D., Louisville, Ky.

ANSWER.—Prescriptions for roentgen-ray treatments may be given approximately only, because it is a well known fact that each apparatus constitutes an individual unit.

The figures quoted were arrived at by using the Holzknecht tables, which are recognized as standard information.

THE CUTANEOUS DISORDER OF MARAT

To the Editor:—I have seen it stated in books in which Marat is mentioned that "while in the sewers of Paris he contracted a horrible skin disease, which became progressively worse, and from which he could only find solace when he was in a bath." What was the disease?

WILFRED GREENBURG, M.D., New York.

ANSWER.—We quote the following from "Post Mortem" by C. MacLaurin: "As for his skin disease, modern writers seem to consider that we should nowadays call it 'dermatitis herpetiformis,' though his political friends artlessly thought it was due to the humors generated by excessive patriotism in so small a body attacking his skin, and thus should be counted for a virtue. Carlyle hints that it was syphilis, thus following in the easy track of those who attribute to syphilis those things which they cannot understand. But syphilis, even if painful, would not have been relieved by sitting for hours daily in a hot bath."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS. Colorado: Denver, Sept. 13. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY. Colorado: Denver, Sept. 13. Sec., Dr. H. W. Loeb, 1402 So. Grand Blvd., St. Louis, Mo.

ARIZONA: Phoenix, Oct. 5. Sec., Dr. W. O. Sweek, Phoenix.

COLORADO: Denver, Oct. 5. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

ILLINOIS: Chicago, Oct. 5-7. Supt., Regis. and Education, Mr. V. C. Michels, Springfield, Ill.

MINNESOTA: Minneapolis, Oct. 5-7. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

MONTANA: Helena, Oct. 5-7. Sec., Dr. S. A. Cooney, Helena.

NEW HAMPSHIRE: Concord, Sept. 9-10. Sec., Dr. Charles Duncan, Concord.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 20-23. Chief, Professional Exams. Bureau, Mr. Herbert J. Hamilton, State Education Building, Albany.

OKLAHOMA: Oklahoma City, Sept. 14-15. Sec., Dr. J. M. Byrum, Shawnee.

UTAH: Salt Lake City, Oct. 5. Director, Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

WISCONSIN: Basic Science Board, Madison, Sept. 18. Sec., Dr. M. F. Guyer, University of Wisconsin, Madison.

New York January Examination

Mr. Herbert J. Hamilton, chief of the Professional Examinations Bureau of New York, reports the written examination held at Albany, Buffalo, New York and Syracuse, Jan. 25-28, 1926. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 212 candidates examined, 168, including 3 osteopaths, passed, and 44, including 1 osteopath, failed. Sixty-eight candidates were licensed by endorsement of their credentials from Jan. 1 to April 14, 1926. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Arkansas Medical Department		(1924)	1
Yale University School of Medicine		(1925)	4
University of Colorado School of Med.		(1924) 1, (1925, 2)	3
Georgetown University School of Medicine		(1922), (1925, 3)	4
George Washington Univ. Med. School		(1924), (1925, 2)	3
Howard University School of Medicine		(1924), (1925, 2)	3
University of Georgia Medical Department		(1924)	1
University of Kansas School of Medicine		(1922)	1
Loyola University Medical Department		(1925)	1
Northwestern University Medical School		(1925)	1
Rush Medical College		(1925)	1
University of Illinois College of Phys. and Surgs.		(1925)	1
Indiana University School of Medicine		(1925)	1
Tulane University of Louisiana School of Medicine		(1925)	3
Johns Hopkins University Med. Dept.		(1915), (1923), (1925)	3
University of Maryland School of Medicine		(1924), (1925, 4)	5
Boston University School of Medicine		(1925)	1
Harvard University		(1919), (1923, 2), (1925)	4
Tufts College Medical School		(1923), (1924), (1925, 6)	8
University of Michigan Medical School		(1923), (1924)	2
University of Minnesota Medical School		(1921), (1925, 2)	3
St. Louis University School of Medicine		(1925)	1
Washington University School of Medicine		(1923)	1
Creighton University College of Medicine		(1924)	1
University of Nebraska College of Medicine		(1923)	1
Albany Medical College		(1925)	1
University and Bellevue Hosp. Med. College		(1924), (1925, 3)	4
University of Buffalo Department of Medicine		(1925)	1
Columbia Univ. College of Phys. and Surgs.		(1924), (1925, 4)	5
Cornell University Medical College		(1924, 2), (1925, 5)	7
Long Island College Hospital		(1925)	3
Syracuse University College of Medicine		(1925)	1
University of Oklahoma School of Medicine		(1925)	1
Hahnemann Medical Coll. and Hosp. of Philadelphia		(1925)	1
Jefferson Med. College of Philadelphia		(1923), (1924), (1925)	3
Univ. of Pennsylvania School of Med.		(1916), (1924), (1925,2)	4
University of Pittsburgh School of Medicine		(1924)	2
Western Pennsylvania Medical College		(1907)	1
University of Tennessee College of Medicine		(1925)	1
Vanderbilt University School of Med.		(1919), (1922), (1923)	3
Baylor University School of Medicine		(1925)	1
University of Texas School of Med.		(1923), (1924), (1925)	3
University of Vermont College of Med.		(1924, 2), (1925, 4)	6
Medical College of Virginia		(1925)	1
McGill University Faculty of Medicine		(1921), (1923,4), (1924, 2), (1925, 2)	9
Queen's University Faculty of Med.		(1919), (1923), (1924, 4)	6
University of Toronto Faculty of Medicine		(1920), (1922, 2), (1923, 3), (1924, 2), (1925, 3)	11
University of Western Ontario Medical School		(1920), (1921)	2
University of Vienna, Austria		(1923)*	1
University of Berlin, Germany		(1910),* (1919), (1921),* (1922),* (1923)*	5
University of Erlangen, Germany		(1923)*	1
National University of Athens, Greece		(1915)*	1
University of Budapest, Hungary		(1906), (1912), (1912),* (1914),* (1921),* (1922),* (1923)*	7
Comenian University of Bratislava, Czechoslovakia		(1923)*	2
University of Bologna, Italy		(1923)*	1
University of Naples, Italy		(1912),* (1917),* (1920),* (1921, 2)* (1923)*	6
University of Palermo, Italy		(1921)*	1
University of Rome, Italy		(1916)*	1
University of Szegedin, Hungary		(1922)*	1
Donskey University, Rostoff on Don, Russia		(1920)*	1
University of Geneva, Switzerland		(1907)	1
University of Constantinople, Turkey		(1919)*	1
Osteopaths			3

College	FAILED	Year Grad.	Number Failed
Howard University School of Medicine		(1925)	1
Baltimore Medical College		(1904)	1
Boston University School of Medicine		(1925)	1
Tufts College Medical School		(1923)	1
University of Michigan Medical School		(1912)	1
University of Buffalo, Medical Department		(1922)	1
Columbia University Coll. of Physicians and Surgeons		(1925)	1
Fordham University School of Medicine		(1917)	1
Long Island College Hospital		(1924)	1
Medico-Chirurgical College of Philadelphia		(1909)	1
Woman's Medical College of Pennsylvania		(1924), (1925)	2
University of Western Ontario Medical School		(1917)	1
University of Vienna, Austria		(1923),* (1925)*	2
Comenian University of Bratislava, Czechoslovakia		(1920)*	1
German University of Prague, Czechoslovakia		(1921)*	1
University of Montpelier, France		(1913)*	1
University of Giessen, Germany		(1923)*	1
University of Munich, Germany		(1925)*	1
National University of Athens, Greece		(1921)*	1
University of Budapest, Hungary		(1921)*	1
University of Szegedin, Hungary		(1914)*	1
University of Catania, Italy		(1922)*	1
University of Naples, Italy		(1916),* (1920),* (1921,* 2), (1923,* 5), (1924)*	10
University of Palermo, Italy		(1921,* 2), (1922),* (1923)*	4
University of Pavia, Italy		(1920)*	1
University of Rome, Italy		(1921)*	1
University of Zurich, Switzerland		(1922)*	1
University of Constantinople, Turkey		(1914)*	1
University of Warsaw, Poland		(1922)*	1
Osteopath			1

College	LICENSED BY ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Stanford University School of Medicine		(1917)	California
Yale University School of Medicine		(1917)	Connecticut
Howard University School of Medicine		(1914)	Virginia
Bennett College of Eclectic Medicine and Surgery		(1891)	Illinois
General Medical College, Chicago		(1924)	Wisconsin
Rush Medical College		(1907)	Utah
Indiana University School of Medicine		(1924, 3)	Indiana
University of Louisville School of Medicine		(1912)	W. Virginia
Tulane University of Louisiana School of Medicine		(1914)	Louisiana
Baltimore Medical College		(1906) Connecticut, (1907)	New Jersey
Johns Hopkins University Medical Department		(1903)	Ohio,
	(1913) Massachusetts, (1917) Maryland		
University of Maryland School of Medicine		(1910)	Maryland,
	(1914) Connecticut, (1916), (1917) Porto Rico		
Harvard University		(1915) Maryland, (1918)	Penna.
Tufts College Medical School		(1917) Massachusetts, (1920)	Porto Rico
University of Michigan Homeopathic Medical School		(1914)	Michigan
University of Michigan Medical School		(1917)	Michigan
University of Minnesota Medical School		(1921)	Minnesota
University Medical College of Kansas City, Mo.		(1905)	Kansas
Washington University School of Medicine		(1909)	Missouri,
	(1924) California		
University of Nebraska College of Medicine		(1912)	S. Dakota
University and Bellevue Hospital Medical College		(1916)	New Jersey
Medical College of Ohio		(1910)	Colorado
Ohio State University College of Medicine		(1924)	Ohio
Western Reserve University School of Medicine		(1924)	Ohio
Hahnemann Med. College and Hospital of Philadelphia		(1895) Pennsylvania, (1896), (1910)	New Jersey
Jefferson Medical College of Philadelphia		(1912)	R. Island
University of Pennsylvania School of Medicine		(1906)	Penna.
	(1914) New Jersey		
University of Pittsburgh School of Medicine		(1916)	Penna.
University of Texas Department of Medicine		(1920)	Texas
Medical College of Virginia		(1923), (1924, 2)	Virginia
University of Virginia School of Medicine		(1903)	Virginia
Laval University Faculty of Medicine		(1905)	New Hamp.
University of Vienna, Austria		(1901)*	Roumania
University of Wurzburg, Germany		(1898)*	Wisconsin
University of Budapest, Hungary		(1899)	Ohio
National University of Ireland, Dublin		(1923)	*New Jersey
University of Naples, Italy		(1903)	*New Jersey
University of Central Spain, Madrid		(1922)	Porto Rico

College	ENDORSEMENT OF GOVERNMENT CREDENTIALS	Year Grad.	Endorsement with
Northwestern University Medical School		(1925)	N. B. M. Ex.
Johns Hopkins University Medical Dept.		(1922, 2), (1924)	N. B. M. Ex.
Boston University School of Medicine		(1924)	N. B. M. Ex.
Harvard University		(1924)	N. B. M. Ex.
Tufts College Medical School		(1924)	N. B. M. Ex.
Cornell University Medical College		(1924)	N. B. M. Ex.
Syracuse University College of Medicine		(1924)	N. B. M. Ex.
University of Virginia School of Medicine		(1924)	N. B. M. Ex.

College	ENDORSEMENT OF DIPLOMA	Year Grad.	Endorsement with
University of Königsberg		(1897)*	Germany
University of Budapest, Hungary		(1912), (1914)*	Budapest
University of Naples, Italy		(1913)*	Naples

* Verification of graduation in process.

Book Notices

INDIGESTION: WHAT IT IS AND HOW TO PREVENT IT. By Arthur L. Holland, M.D., Assistant Professor of Clinical Medicine, Cornell University Medical College. Cloth. Price, $1.25. Pp. 130, with 12 illustrations. New York: D. Appleton & Co., 1926.

The author has presented for the use of the invalid with gastro-intestinal diseases an analysis of the anatomy and functions of the gastro-intestinal tract. This he follows with discussions of symptoms, food phobias and irregularities of the bowel function. It is amusing to find in one of the concluding chapters on general hygiene the following statement:

> To begin with, the layman is advised to omit all reading pertaining to his body functions, diseases, operations, drugs, food chemistry, diets, or any such subjects.

The book contains much valuable advice, but hardly sufficient to enable a layman to help himself much without medical attention.

UEBER DIE AGRAPHIE UND IHRE LOKALDIAGNOSTISCHEN BEZIEHUNGEN. Von Dr. Georg Herrmann, und Prof. Dr. Otto Pötzl. Heft 35. Abhandlungen aus der Neurologie, Psychiatrie, Psychologie und ihren Grenzgebieten. Herausgegeben von K. Bonhoeffer. Paper. Price, 24 marks. Pp. 380, with 29 illustrations. Berlin: S. Karger, 1926.

As the basis for this work the authors outline a case in which the earliest and most prominent symptom was agraphia associated later with alexia, left hemianopia, disturbances in showing and naming the fingers of the left hand, left hemiparesis, and disturbances in tactile localization on the left side. The focal diagnosis, confirmed exactly at operation and later at necropsy, placed the lesion at the junction of the angular gyrus with the second occipital convolution. The tumor, though malignant in character, was shelled out without difficulty, and the patient improved greatly for a time. The evolution and disappearance of the symptoms lead to the view that agraphia is an individual disturbance of great localizing value and the relations with apraxia, word-blindness and other forms of aphasic disorder are discussed. The book contains an admirable review of the recorded cases and includes the report of a second case observed by the authors, and is an excellent contribution to the subject of the highest motor integrations and their relations to unilateral cerebral activity.

THE EVOLUTION OF ORTHOPAEDIC SURGERY. By Robert Bayley Osgood, A.B., M.D., John B. and Buckminster Brown Professor of Orthopaedic Surgery in Harvard University. First Detroit Orthopaedic Lecture. Auspices of the Wayne County Medical Society, Detroit, Michigan. March 16, 1925. Cloth. Pp. 70, with 49 illustrations. St. Louis: C. V. Mosby Company, 1925.

Here is presented in permanent form the first lecture delivered under the Detroit Orthopedic Lectureship Fund. It is delightful to have a history of orthopedic surgery, beautifully illustrated with portraits of the great contributors to this specialty. The essay concludes with an appeal for more research and less therapy.

THE CITY. By Robert E. Park, Ernest W. Burgess and Roderick D. McKenzie; with a bibliography by Louis Wirth. Cloth. Price, $2.10. Pp. 239. Chicago: University of Chicago Press, 1925.

In this volume, the authors have collected a number of essays on the main factors of community life, largely by Professor Park, but including an essay by R. D. McKenzie on the ecologic approach to the study of the human community, and two by Burgess on the growth of the city and on a scientific basis for neighborhood work. The topics of Professor Park include a discussion of the newspaper, juvenile delinquency, the hobo and other unusual aspects of city life. A valuable bibliography assembled by Louis Wirth completes the text.

DIE BIOLOGIE DER PERSON. Ein Handbuch der allgemeinen und speziellen Konstitutionslehre. Herausgegeben von Prof. Dr. Th. Brugsch und Prof. Dr. F. H. Lewy. Lieferung I. Einführung in die Konstitutionslehre, ihre Entwicklung zur Personallehre. Von Prof. Dr. Th. Burgsch. Das Problem der Individualität. Von Dr. E. Straus. Die rechnerische Auswertung statistischer Beobachtungsergebnisse (Einführung in die Kollektivmasslehre). Von Dr. H. Salinger. Bedeutung des Normbegriffes in der Personallehre. Von Prof. Dr. I. Kaup. Allgemeine Vererbungslehre. Von Prof. Dr. W. Johannsen. Paper. Price, 15 marks. Pp. 322, with 22 illustrations. Berlin: Urban & Schwarzenberg, 1926.

This is the first number of what will presumably be one of those tremendous German systems of knowledge which are at the same time the admiration and despair of the rest of the world. The first number contains essays dealing with the human constitution and the problem of individuality, and three highly technical essays on anthropometry and heredity. According to the plan of the work, it will appear in four volumes: the second concerning somatic and psychophysical conditions; the third, the various organs, and the fourth, human sociology.

FOOD PRESCRIPTIONS FOR OVERWEIGHT. By Harrington Bennett Monroe, M.D. Cloth. Price, $1.50. Pp. 50. Los Angeles: McCulloch Press, 1925.

The author has carefully selected diets for those desiring to reduce 2 pounds each week. Each diet is supplemented by a statement as to its caloric content, indicating an average of 850 calories daily. The book is helpful, quite devoid of frippery, and easily used by the sensible.

PATHOLOGISCHE HISTOLOGIE. EIN UNTERRICHTSKURS FÜR STUDIERENDE UND AERZTE. Von Dr. Max Borst, O. ö. Professor der allgemeinen Pathologie und der pathologischen Anatomie an der Universität München. Second edition. Paper. Price, 48 marks. Pp. 435, with illustrations. Leipsic: F. C. W. Vogel, 1926.

In reviewing the first edition (THE JOURNAL, July 22, 1922, p. 323) we recommended this as a useful guide and commented on the excellence of the illustrations, nearly all in colors. There are sixty-seven additional pages. Better illustrations replace many in the first edition, and thirty-seven are new. Except the last chapter, given to a consideration of tumors in general, the disease conditions are dealt with entirely by organs; in other words, it is "special pathology," and now a chapter is devoted to organs of internal secretion. Wherever advanced pathology is taught and proper book freedom prevails, some students who read German readily, it is hoped, will possess this work and promote the wholesome influence that is bound to follow its introduction to class rooms where various works are being assiduously consulted and compared.

SIR WILLIAM OSLER. Memorial Number. Appreciations and Reminiscences. Bulletin No. IX of the International Association of Medical Museums and Journal of Technical Methods. Cloth. Privately issued. Pp. 632, with illustrations. Montreal, 1926.

It was a happy idea of the International Association of Medical Museums to issue as one of its bulletins a collection of reminiscences and other writings relative to Sir William Osler. To this collection, Dr. William Welch contributes a foreword, with his personal knowledge of Osler's character and ambitions. The work is divided into several parts, beginning with essays by Welch, Allbutt, Maude Abbott; following with editorials on various aspects of Osler's work; then a number of general articles on Osler's relationship to various medical specialties; then a number of biographic essays, including reminiscences of colleagues and students, and finally presenting the complete annotated bibliography of Osler's writings and of writings about Osler. The book is well printed and handsomely illustrated with numerous original photographs not heretofore available. It does not duplicate the excellent biography of Osler by Harvey Cushing, but is so definitely supplementary to it that every owner of the former volumes might well possess this one also.

NEUROLOGICAL FRAGMENTS. By J. Hughlings Jackson, M.D., F.R.S., F.R.C.P., with Biographical Memoir by James Taylor, M.D., F.R.C.P., and Including the "Recollections" of the Late Sir Jonathan Hutchinson and the Late Dr. Charles Mercier. Cloth. Price, $3.75. Pp. 227, with 1 illustration. New York: Oxford University Press, 1925.

This volume constitutes an adequate memoir of J. Hughlings Jackson. It contains a number of short articles published in the *Lancet* at various intervals, an address to the Hunterian Society, a biography, and two essays concerning Dr. Jackson by Sir Jonathan Hutchinson and Dr. Mercier.

The book is supplemented with a bibliography of Jackson's writings. It is a delightful volume for the library of any neurologist.

CHIRURGIE DU SYMPATHIQUE. CHIRURGIE DU TONUS MUSCULAIRE. La section des rameaux communicants. Par P. Wertheimer, et A. Bonniot, Chirurgien des hôpitaux de Grenoble. Préface du Pr. Leriche. Paper. Price, 22 francs. Pp. 134, with 21 illustrations. Paris: Masson et Cie, 1926.

It is astonishing how many monographs on surgical subjects could be published if one described the gross anatomy of the parts, reviewed only a part of the literature on the physiology of the subject, wrote engagingly of the surgical technic, and for seasoning added a small number of clinical cases, the majority of which have already been recorded by others. The enjoyment one gets from this monograph comes from speculating just how far one man's (Langelaan's) misconstruction and misinterpretation of Sherrington's work and his own loosely controlled experiments, the majority of which have been proved to be erroneous, will lead the surgical profession astray. Here is an example of a repetition as facts of statements which the authors evidently fully accept but have no intention of attempting to corroborate themselves; an example of finding a loophole to escape observations that do not fit in with the scheme of things. This monograph has nothing new or original to give us; it is wholly lacking in a scientific attitude and, as far as we can discover, is only another book to add to the heap of print devoted to armchair philosophy concerning the fundamental principles concerned in the surgery of the sympathetic system.

NON-SURGICAL TREATMENT OF DISEASES OF THE MOUTH, THROAT, NOSE, EAR AND EYE. By Thomas H. Odeneal, M.D., Otologist, Rhinologist, Laryngologist and Ophthalmologist to the Beverly Hospital Corporation, Beverly, Massachusetts. Cloth. Price, $4 net. Pp. 428, with 4 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

The author indicates that the book is intended to be of "material assistance to the young specialist and to the general practitioner in particular." While the title indicates that this is nonsurgical treatment of the various parts involved, in a good many instances surgical indications and technic are mentioned as expressions which enhance the value of the context. The work, while not voluminous, nevertheless covers the subject with considerable detail. Numerous practical points are given, and in many instances illustrative prescriptions are included. The work is systematically arranged, and the various paragraphs are well marked with the titles in large type so that reference to the various subjects is easily made. Indications for surgical intervention are based on good judgment, and the therapeutic suggestions show good common sense. In a word, the book should prove of considerable practical value to the general practitioner who is called on to treat some of the more common ear, eye, nose and throat conditions but who has not had the detailed training in those subjects usually possessed by the specialist in these lines.

HANDBUCH DER HALS-NASEN-OHREN-HEILKUNDE. Herausgegeben von A. Denker und O. Kahler. Sechster Band. Die Krankheiten des Gehörorgans. Erster Teil. Anatomie. Entwicklungsgeschichte. Physiologie. Pathologie. Untersuchungsmethoden. Therapie. Paper. Price, 96 marks. Pp. 1274, with illustrations. Berlin: Julius Springer, 1926.

It is impossible in an ordinary review to give any adequate idea of the stupendous work involved in this volume. The mere mention of the names of some of the contributors gives some index of the caliber of the publications: Prof. William Brock on comparative anatomy; Prof. Gustav Alexander on embryology and anthropology; Dr. Herman Marx on malformations of the ear; Professor Koerner on applied anatomy of the ear; Dr. Eckert Moebius on microscopic examination and histology of the ear; Dr. G. Anton on the centers and tracks of the nervus cochlearis and the nervus vestibuli; Karl L. Schaefer and Max Giesswein on physiology of the ear; Prof. H. Neumann and Dr. F. Fremel on physiology of the semicircular canal. Under the heading of pathology and therapy we find such names as Dozent Oscar Beck and Prof. F. R. Nager. This encyclopedic volume holds a world of information and a great mass of detail. There are many wonderful illustrations and a complete bibliography in each section of the subject. When completed, it will probably be the most complete and detailed work on the ear that has as yet appeared. The otologist with a studious sense will find his time spent in the reading most profitable, and the book will probably serve for many years as a source of authoritative information.

BLOOD CHEMISTRY: Colorimetric Methods. For the General Practitioner; with Clinical Comments and Dietary Suggestions. By Willard J. Stone, B.Sc., M.D., Attending Physician, Los Angeles General Hospital and Pasadena Hospital. Introduction by George Dock, M.D. Second edition. Cloth. Price, $3.25 net. Pp. 129, with 7 illustrations. New York: Paul B. Hoeber, Inc., 1926.

In this edition, Stone's booklet has been almost entirely rewritten "in the hope that it may continue to stimulate interest in methods proved by experience to be readily available to every internist in his own laboratory." In the selection of his methods, the author has properly limited himself to those that have been introduced by our own American investigators and which have proved so valuable in advancing our knowledge of the chemical variations in the blood. The sections dealing with the clinical interpretation of the laboratory observations have been enlarged to keep pace with the literature of the subject, and will prove of much value to the general worker. The dietary tables should prove of especial interest to the clinician in the handling of his cases. We can recommend this work to both the practitioner and the student who may wish to become familiar with the methods of blood chemistry in their daily routine.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

DIE CHIRURGIE: Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 9. Band V. Die Chirurgie der Bauchwand. Von Geh. Med.-Rat. Prof. Dr. W. Müller. Die Lehre von den äusseren Hernien. Von Priv.-Doz. Dr. H. Eggers. Die Chirurgie des Bauchfells und des Netzes. Von Dr. J. Petermann. Die Chirurgie des Wurmfortsatzes. Von Prof. Dr. A. Läwen und Prof. Dr. H. Burckhardt. Paper. Price, 26 marks. Pp. 360, with 104 illustrations. Berlin: Urban & Schwarzenberg, 1926.

New volume on abdominal surgery with essays on hernia, appendectomy and similar subjects.

UEBER DAS MORPHOLOGISCHE WESEN UND DIE HISTOPATHOLOGIE DER HEREDITAER-SYSTEMATISCHEN NERVENERKRANKHEITEN. Von Karl Schaffer, O. Ö. Professor der Psychiatrie und Neurologie an der Universität Budapest. Heft 46. Monographien aus dem Gesamtgebiete der Neurologie und Psychiatrie. Herausgegeben von O. Foerster und K. Wilmanns. Paper. Price, 24 marks. Pp. 253, with 135 illustrations. Berlin: Julius Springer, 1926.

Monographic report of pathologic changes of nervous system in hereditary types of disease.

A TEXT-BOOK OF UROLOGY. By Oswald Swinney Lowsley, A.B., M.D., F.A.C.S., Director of the Department of Urology of the New York Hospital, and Thomas Joseph Kirwin, Ph.C., B.S., M.D., Chief of Clinic of the Department of Urology of the New York Hospital. Cloth. Price, $10. Pp. 699, with 246 illustrations. Philadelphia: Lea & Febiger, 1926.

Well illustrated modern textbook covering medical and surgical aspects of diagnosis and treatment of conditions in genito-urinary tract.

A POPULAR ENCYCLOPEDIA OF HEALTH. By Lee K. Frankel, Ph.D., Second Vice-President, Metropolitan Life Insurance Company, and Donald B. Armstrong, M.D., Sc.D., Assistant Secretary, Metropolitan Life Insurance Company. With the collaboration of Genevieve Fox. Cloth. Price, $3.50. Pp. 366, with illustrations. New York: Albert and Charles Boni, 1926.

Household medical book by trained educators, a useful reference for those who want one.

HANDBUCH DER BIOLOGISCHEN ARBEITSMETHODEN. Herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden. Lieferung 196. Abt. V, Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 7, Heft 5. Klinische Methoden der Unter-

suchung des Gehörorgans. Von Erich Schlittler. Paper. Price, 6 marks. Pp. 653-770, with 17 illustrations. Berlin: Urban & Schwarzenberg, 1926.

Additional volumes to an extensive German system covering methods of studying.

RESEARCH IN PROGRESS AT THE UNIVERSITY OF MINNESOTA, JULY 1924-JULY 1925. Compiled by Clarence M. Jackson, M.S., M.D., LL.D., Director of the Department of Anatomy in the University of Minnesota. Research Publications of the University of Minnesota, Bibliographical Series No. 3. Paper. Price, $1.25. Pp. 306. Minneapolis: University of Minnesota, 1926.

Statement of progress in many fields defining the interests of a great university.

ALLERGISCHE DIATHESE UND ALLERGISCHE ERKRANKUNGEN (IDIOSYNKRASIEN, ASTHMA, HEUFIEBER, NESSELSUCHT U. A.). Von Dr. Hugo Kämmerer, Professor der Universität München. Paper. Price, 13.50 marks. Pp. 210. Munich: J. F. Bergmann, 1926.

Excellent monograph covering recent literature on allergy and hypersensitivity with guide for study of cases in this group.

HYDROGEN ION CONCENTRATION OF THE BLOOD IN HEALTH AND DISEASE. By J. Harold Austin, Professor of Research Medicine, University of Pennsylvania, and Glenn E. Cullen, Professor of Biochemistry, Vanderbilt University Medical School. Cloth. Price, $2. Pp. 75, with 8 illustrations. Baltimore: Williams & Wilkins Company, 1926.

Monograph on present status of technic for determining acid-base relationships in the body.

SURGICAL ANATOMY OF THE HUMAN BODY. Vol. 1—Scalp, Cranium, Brain, Face, Mouth, Throat, Organs of Special Senses. By John B. Deaver, M.D., Sc.D., LL.D., Surgeon-in-Chief to the Lankenau Hospital, Philadelphia. Second edition. Leather. Price, $12. Pp. 551, with illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

Established guide to the topography of the human structure for surgical explorers.

LEITFADEN DER NEUROLOGISCHEN DIAGNOSTIK: Eine Differentialdiagnose aus dem führenden Symptom für praktische Aerzte und Studierende. Von Dr. Kurt Singer, Nervenarzt in Berlin. Second edition. Paper. Price, 9 marks. Pp. 246, with 34 illustrations. Berlin: Urban & Schwarzenberg, 1926.

Second edition of brief German guide to neurologic diagnosis.

EDGAR'S PRACTICE OF OBSTETRICS: For Students and Practitioners of Medicine. By J. Clifton Edgar, Consulting Obstetrician to Bellevue Hospital, New York City. Revised by Norris W. Vaux, Clinical Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Sixth edition. Cloth. Price, $8. Pp. 779, with 684 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

New edition, carefully revised, edited and condensed.

THE WHITE SPOTS OF EPILEPSY AND OTHER PHASES OF THE DISEASE. By Edward A. Tracy, M.D., School Physician Boston Public Schools. Cloth. Price, $2.50. Pp. 129, with 12 illustrations. Boston: Richard T. Howard, 1926.

Reprinted essays with special emphasis on a diagnostic sign.

PRINCIPLES OF HUMAN PHYSIOLOGY. By Ernest H. Starling, C.M.G., F.R.S., M.D., Foulerton Professor of the Royal Society. The chapter on the Sense Organs edited by H. Hartridge, M.A., M.B. Cloth. Price, $8.50. Pp. 1074, with 570 illustrations. Philadelphia: Lea & Febiger, 1926.

Fourth edition of a standard textbook, much improved.

DIE LICHT-THERAPIE. Von Dr. med. Hans Malten, Leitender Arzt des Dr. Maltenschen Institutes für Nerven- und Stoffwechselkranke, Baden-Baden. Paper. Price, 6.60 marks. Pp. 88, with 66 illustrations. Munich: J. F. Bergmann, 1926.

Serious attempt to put light therapy on a scientific basis.

PRÉCIS DE RADIOTHÉRAPIE PROFONDE. Par Dr. Iser Solomon, radiologiste de l'Hôpital Saint-Antoine. Préface du Dr. A. Béclère, membre de l'Académie de médecine. Paper. Price, $2.40. Pp. 512, with 172 illustrations. Paris: Masson & Cie, 1926.

French guide to radiotherapy.

RATIONAL GLAND THERAPY FOR WOMEN, PARTICULARLY IN RELATION TO MENSTRUATION. By I. Wanless Dickson, M.B., F.R.C.S. Cloth. Price, $2. Pp. 96. New York: Paul B. Hoeber, Inc., 1926.

Not so much rational as hopeful or credulous.

REPORT UPON THE WORK OF THE MINERS' PHTHISIS MEDICAL BUREAU FOR THE TWELVE MONTHS, ENDED JULY 31ST, 1924. Union of South Africa. Paper. Price, 4s. 0d. Pp. 56. Cape Town, 1926.

STATISTICAL REPORT OF THE HEALTH OF THE NAVY FOR THE YEAR 1923. Paper. Price, 5s. net. Pp. 149. London: His Majesty's Stationery Office, 1926.

Medicolegal

Denied Mandamus to Compel Issuance of License

(Haas v. Hassig et al. (Kan.), 242 Pac. R. 127)

The Supreme Court of Kansas says that this action was one of mandamus to compel the state board of medical registration and examination to issue to the plaintiff a license to practice medicine and surgery in the state of Kansas. He was graduated in 1920 from the Kansas City (Mo.) College of Medicine and Surgery. In November, 1923, after full investigation, the state board of health (in Missouri) found the Kansas City college to be a nonreputable medical college. The college refuses to permit the American Medical Association to inspect it for purpose of classification, and is graded as a class C institution. The state board of this state (Kansas) approves the classification of the American Medical Association, and, by rule adopted in 1918, does not recognize class C colleges. The licensing boards of forty-three states do not recognize the Kansas City institution. It claims to be an eclectic medical college, but the National Eclectic Association does not recognize it. The state of Arkansas has three licensing boards—one an eclectic medical board. That board recognizes the Kansas City institution, and, in 1921, granted the plaintiff a license to practice in Arkansas. In February, 1923, the plaintiff made application for a license to practice in Kansas, which was refused on the following ground:

> The eclectic medical examining board of Arkansas, being in disrepute owing to its loose methods in the past, is no longer recognized by this board, and no application for reciprocity upon the indorsement from that board will be accepted or taken up for consideration by this board until such time as the Arkansas eclectic board will prove that they are upholding the standard of the profession as adopted by the medical profession and the boards of the states in the U. S.

Plaintiff charges the state board of medical registration and examination with abuse of discretion and arbitrary conduct discriminatory against him. It is true that the board, as it was constituted from June, 1923, to February, 1925, was guilty of favoritism. It arbitrarily admitted four men in violation of its own rules. The record is barren of justification or excuse, and the influences operating to produce the result are not revealed. The present board has adhered to its rules, and what plaintiff desires is a writ of mandamus to compel it to act irregularly. The board had authority to promulgate, and has authority to enforce, the rules that exclude plaintiff from practicing medicine and surgery in Kansas. The writ of mandamus will not be granted to compel a breach to those rules. Furthermore, if some dispensation were permissible, plaintiff is not a person to be considered favorably, because of his contumacy. For two years he has pertinaciously practiced medicine in this state in defiance of its laws. The writ is denied, all the justices concurring.

Arteriosclerosis a Disease—Expert Evidence

(Order of the United Commercial Travelers of America v. Nicholson et al. (U. S.), 9 Fed. R. (2d) 7)

The United States Circuit Court of Appeals, second circuit, in reversing a judgment that was rendered for the plaintiffs, says that they brought this action to recover on an insurance certificate issued by the defendant fraternal beneficial order to their father. Their theory was that he met his death because of a fall which he had in going up a stairway. But three physicians testified that the fall might have been due to arteriosclerosis, and that evidence stood uncontradicted. There was also evidence in the record as to his difficulty in walking, which was quite significant. The contract on which this action was brought was limited to an insurance against the results of bodily injury "effected through external, violent and accidental means" which should be the sole and only cause of the death, disability or loss. The trial judge was asked to charge that the plaintiffs could not recover if disease contributed to the death of the insured in any degree. The judge gave that charge, but qualified it by saying, "I should

say further that arteriosclerosis of certain arteries of the body is not disease within the meaning of the word in this charge." This court does not doubt that he erred in the qualification which he attached to the requested instruction. The arteries, like the brain, the lungs and the other organs of the human body, may become diseased. It is common knowledge, of which this court can take judicial notice, that arteriosclerosis is a frequent cause of death, and that one who is in an advanced state of arteriosclerosis, as it was testified that the insured was, is not only diseased, but very dangerously diseased.

In a case such as this, in which reliance is placed on expert or opinion evidence, it is important to point out to the jury that the opinion of an expert has no probative force in case the jury fails to find that the facts assumed in the hypothetic question were true. And a court should not permit a jury to be influenced by evidence on which they cannot, within the laws of correct reasoning, make a finding. This court thinks that the jury in this case might well have been instructed, in considering purely expert testimony and the weight to be attached to it, that it was their duty to consider whether the facts embodied in the hypothetic question had been established by a preponderance of the evidence.

Again, the physician who attended the insured at the hospital testified that lobular pneumonia was the direct cause of his death. But neither that physician nor any other witness testified that in his opinion the death of the insured was occasioned by accident alone and was independent of all other causes. In order that the plaintiffs might recover, it was necessary for them to prove that disease did not contribute "in any degree" to cause death. To say that the fall caused shock, shock caused lobular pneumonia, and that the latter caused death, did not prove the plaintiffs' case, even if a jury believed it; for in such a case disease would contribute in some degree to cause death.

Regarding Rule of Privilege—Measurement of Damages

(Darling v. Pacific Electric Ry. (Calif.), 242 Pac. R. 703)

The Supreme Court of California says that a physician was called by the plaintiff for the purpose of testifying that another witness, one Minnock, was physically unable to be present in court. This was for the purpose of laying a foundation for the introduction of Minnock's deposition, taken some time prior thereto. It was unquestioned that the relation of physician and patient had been established as a matter of law. The physician, after testifying generally on direct examination that Minnock could not be present in court, was interrogated by counsel for the defendant, who endeavored to elicit the exact nature of the patient's infirmities. On his own motion the physician refused to testify in this behalf on the ground that to do so would violate a professional confidence. The trial court sustained the physician in his refusal to testify, and in so doing no error was committed.

The provision of the code of civil procedure that a licensed physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient, is a personal privilege given to the patient, and no one, except in certain specified cases, has the right to waive it for him. This rule of privilege applies although the patient is not a party to the action in which a disclosure is sought and is not present to object. There was no express or implied waiver of this privilege in the instant case, and, in the absence thereof, the physician was clearly within his rights in refusing to testify concerning a matter that could not be divulged without a breach of professional confidence. The defendant argued that in giving his deposition Minnock, the patient, waived the privilege accorded by the code of civil procedure the same as the testator did *In re Mullin*, 110 Calif. 252, 42 Pac. 645, in making his physician a subscribing witness to his will. The rule enunciated in the Mullin case, however, cannot be extended to embrace such a situation as was presented in the instant case. In making a privileged person a subscribing witness to a will the testator must be deemed to have actually waived the privilege, for it is incumbent on such witness to testify, if called on, in order to prove the will, concerning the soundness of the mind of the testator, whereas in the instant case the physician was called as a witness only for the purpose of explaining the absence of the person whose deposition was sought to be offered in evidence. He did not testify, nor did he attempt to testify, concerning the person's competence to make such deposition.

The court does not think that the amount of damages—$15,000—awarded by the jury to the plaintiff, Mrs. Darling, whose left foot was so badly crushed by one of the defendant's electric cars as to render amputation necessary, was so large or so disproportionate as to be palpably the result of prejudice and passion. Courts have repeatedly refrained from attempting to establish any precise rule for the measurement of damages in actions for personal injuries, but, rather from necessity, leave the measurement to the sound sense and fair judgment of the jury. A verdict, therefore, will not be disturbed because excessive, unless the amount of damages is obviously so disproportionate to the injury proved as to justify the conclusion that the verdict was not the result of the cool and dispassionate discretion of the jury.

Employee Not Required to Have Operation for Cataract

(Gulf States Steel Co. v. Cross (Ala.), 106 So. R. 870)

The Supreme Court of Alabama, in affirming a judgment in favor of plaintiff Cross under the workmen's compensation act, says that the court below found due compensation for him for permanent total disability in the loss of sight of one eye, resulting from a cataract produced by a blow from a flying fragment of ore in mining operations. The evidence, presented by bill of exceptions, clearly supported the court's finding. A motion made on the trial to suspend compensation until the employee submitted to surgical treatment, which had not been tendered theretofore, might well be overruled, unless the tender of treatment was so made as to give the employee reasonable opportunity to be properly advised in that regard. Moreover, where the expert witnesses were, as they were here, equally divided as to the nature and cause of the cataract and whether an operation would be successful, the court properly declined to suspend compensation, under section 7567 of the code of Alabama of 1923, for refusal to submit to an operation. Statutes of this kind are not construed as requiring the employee to submit to an operation as a condition to compensation, unless there is reasonable assurance of success and the operation is free from serious danger.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Colorado Springs, Sept. 13-18. Dr. Luther C. Peter, N. E. Cor. Chestnut and 20th Streets, Philadelphia, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Chicago, Sept. 20-22. Dr. James E. Davis, 111 Josephine Ave., Detroit, Secretary.

American Climatological and Clinical Association, Philadelphia, Sept. 27-28. Dr. A. K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.

American Electrotherapeutic Association, Atlantic City, Sept. 8-11. Dr. Richard Kovacs, 223 E. 68th Street, New York City, Secretary.

Colorado State Medical Society, Colorado Springs, Sept. 21-23. Dr. F. B. Stephenson, 460 Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Sandpoint, Sept. 2-5. Dr. J. N. Davis, Kimberly, Secretary.

Indiana State Medical Association, West Baden, Sept. 22-24. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Kentucky State Medical Association, Frankfort, Sept. 20-23. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Lansing, Sept. 14-17. Dr. F. C. Warnshuis, Powers Theatre Building, Grand Rapids, Secretary.

Missouri Valley, Medical Society of the, Council Bluffs-Omaha, Sept. 15-17. Dr. Charles Wood Fassett, 115 East 31st St., Kansas City, Mo., Sec'y.

Nevada State Medical Association, Reno, Sept. 24-25. Dr. H. J. Brown, Gray-Reid Building, Reno, Secretary.

Wisconsin, State Medical Society of, Madison, Sept. 15-17. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in North America for a period of three days. Foreign journals prior to 1921, or domestic journals prior to 1923, are not available. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

1: 257-391 (Feb.) 1926

*Digital Manifestations of Subacute Bacterial Endocarditis. G. Blumer, New Haven, Conn.—p. 257.
*Bundle-Branch Block. J. E. Talley and O. K. Reed, Philadelphia. —p. 262.
*Heart Block: Barium Chloride Treatment. G. R. Herrmann and R. Ashman, New Orleans.—p. 269.
*Anatomy of Blood Vessels in Valves of Human Heart. M. A. Kugel, New Haven, Conn., and L. Gross, New York.—p. 304.
*Spontaneous Rupture of Heart. C. E. de la Chapelle, New York.—p. 315.
*Auricular Beats Due to Stimulation of Auricles by Contracting Ventricles During Complete Heart Block. P. S. Barker, Ann Arbor, Mich. —p. 349.
Estimating Myocardial Reserve. W. D. Stroud, Philadelphia.—p. 354.
Organic Heart Disease. L. I. Dublin, New York.—p. 359.

Digital Manifestations of Subacute Bacterial Endocarditis.—The detection of digital lesions in the form of Osler nodes, tender digits, splinter hemorrhages or clubbing of the fingers, Blumer regards as being of great value in the diagnosis of doubtful cases of subacute bacterial endocarditis. No conclusions can be drawn at present as to the frequency of these different phenomena. The great discrepancies as to the frequency of their occurrence, which are noted in the literature, are probably due not so much to regional variations in their occurrence as to differences in observational capacity and to lack of knowledge of their occurrence and significance. It is probably safe to assume that, as they become more widely known, they will be more frequently observed and that the apparently great differences in their frequency, according to different authors, will disappear.

Bundle-Branch Block.—Twenty-eight cases of bundle-branch block are reported by Talley and Reed. They include nineteen with right branch block, one with temporary right, three with characteristic left, four with left, with reduced voltage, and one with both temporary right and left branch defect. All showed some degree of cardiovascular sclerosis, many an advanced degree. Prolonged periods of rest averted for months or years the final breakdown. Restricted use of digitalis helped at times. In this series the patients with left branch defect were among the shortest lived.

Heart Block.—Two clinical cases of heart block are presented by Herrmann and Ashman, which showed unusually significant therapeutic responses. The spectacular results of barium chloride therapy as well as the effects of other drugs are discussed in detail. An explanation of the mechanism of heart block is offered.

Blood Vessels in Heart Valves.—Evidence is presented by Kugel and Gross to prove that: blood vessels exist in some valves in a small percentage of hearts other than those of fetuses; these are of developmental and not of inflammatory origin; they occur most frequently in the aortic leaflet of the mitral valve, and may exist either in what is termed the complete or incomplete form. The proof of the existence of arteriae valvulares should put new impetus into the study of the mechanism of valvular endocarditis and render tenable the belief in the possible embolic origin of at least some forms of valvular endocarditis.

Spontaneous Rupture of Heart.—Fourteen cases of spontaneous rupture of the heart are analyzed and described by de la Chapelle. Eleven of the patients were representatives of the laboring class; no members of the professional class were represented. Syphilis was not an etiologic factor in any case. Arteriosclerosis was the predominant factor in all of the fourteen cases. A thrombus was found in twelve of the cases; the ramus descendens of the left coronary artery was thrombosed in nine instances, the main trunk in one, the circumflex branch in one, and the right coronary in one. Nine of the hearts ruptured while in the stage of acute infarction. Microscopically, the site of rupture exhibited necrosis of the muscle, with infiltration of red blood cells and leukocytes. True fatty degeneration was present in five of the fourteen cases, representing the sequel to infarction and necrosis rather than the cause of rupture. Six of the cases presented arteriosclerotic interstitial nephritis; four showed arteriosclerotic changes in the vessels of the brain; otherwise, the findings in the viscera were irrelevant.

Auricular Beats with Contracting Ventricles.—A case is reported by Barker in which the auricles responded to stimulation by the ventricles during complete A-V heart block. This is explained by the mechanical stimulation by the contracting ventricles of the A-V bundle above the lesion producing the block, with retrograde conduction of the impulse to the auricles.

Archives of Internal Medicine, Chicago

37: 733-866 (June) 1926

*Arteriosclerosis and Increased Blood Pressure. F. R. Nuzum, B. Seegal, R. Garland and M. Osborne, Santa Barbara, Calif.—p. 733.
*Diagnosis of Pulmonary Neoplasm. M. Fishberg, New York.—p. 745.
*Diagnostic Aid in Evaluating Vigor of Inspiratory Costal Excursion. C. F. Hoover, Cleveland.—p. 773.
Corrigan's Description of Aortic Insufficiency. L. Clendening, Kansas City, Mo.—p. 780.
*Confirmatory Sign of Free Fluid in Pleural Space. M. Lasersohn, Richmond, Va.—p. 793.
*Biliary System Function Tests. W. P. Murphy, Boston.—p. 797.
Water Metabolism. III. Dehydration Fevers. E. Andrews, Chicago. —p. 815.
*Method for Continuous Quantitative Estimation of Gastric Secretion and Discharge in Man. A. L. Bloomfield and C. S. Keefer, Baltimore. —p. 819.
*Relation of Erythrocyte Sedimentation Reaction to Ability of Flocculation of Plasma and Serum. E. H. Rubin, New York.—p. 848.
*Seasonal Variation in Onset of Acute Diabetes. S. F. Adams, Rochester, Minn.—p. 861.

Arteriosclerosis and Increased Blood Pressure.—By feeding various excessive protein diets to experimental animals for periods as long as two years, Nuzum and his associates have obtained increased blood pressures. The animals in which the most marked increase of blood pressures were obtained presented extensive arteriosclerosis of the aorta and in many instances of the coronary arteries. Evidence of kidney injury was also obtained, as demonstrated by chemical studies of the blood and of the urine. It has been demonstrated that increased blood pressure and arteriosclerosis can be produced without an increase of cholesterol in the diet. Excessive amounts of fat were found in the liver and myocardium of animals whose diet was high in cholesterol.

Diagnosis of Pulmonary Neoplasm.—The clinical aspects of sixty cases of primary malignant disease of the bronchi, lung and pleura are discussed by Fishberg. In thirty-six cases necropsies were obtained. Contrary to the prevailing opinion in clinical circles, Fishberg found that the diagnosis of the disease can be made during life in the majority of cases. When the symptomatology and physical signs are carefully gone into and properly interpreted, the chances of error are no higher than in other chronic pulmonary diseases. While roentgen-ray examination and the study of the cytology of the sputum and pleural exudates are invaluable in many cases, and mostly as corroborative evidence, the history, symptomatology and physical signs are most important.

Evaluating Vigor of Inspiratory Costal Excursion.—The lessened vigor of excursion of the ribs in any region, Hoover asserts, will give evidence for any lesion that may diminish the extensibility of the underlying lung when the extent of excursion may reveal no evidence and when percussion and auscultation reveal no evidence for diminished resonance or increased density of the lung and when adventitious auscultatory signs are wanting. Because extensibility is the first attribute affected in all pulmonary diseases, any impairment of this attribute offers the earliest procurable evidence for regional lung disease.

Sign of Free Fluid in Pleural Space.—Dulness and decrease in the intensity of the breath sounds high in the axilla of the

affected side, Lasersohn says, is a confirmatory sign of free fluid in the pleural sac. Dulness with an increase in the intensity of the breath sounds high in the axilla on the side that otherwise shows the classical signs of free fluid does not confirm this diagnosis, and is usually indicative of consolidation rather than of fluid. This sign appears to be of value in differential diagnosis, especially between a thick pleura at the base and free fluid. The amount of fluid present is roughly proportional to the extent and degree of dulness and of decrease in the intensity of the breath sounds high in the axilla. The high level in the axilla of free fluid due to capillarity and the degree of retraction of the lungs forms the basis for the signs of fluid in the axilla.

Biliary System Function Tests.—Murphy relates his experiences with the Rosenthal modification of the phenoltetrachlorphthalein test in fifty cases and the so-called icterus index modified from the work of Blankenhorn and of Meulengracht in 206 cases. In order to simplify the latter test and to make it more universally available for clinical use, Murphy devised a method in which the color comparisons may be made without the use of the colorimeter by using various dilutions of potassium bichromate, which correspond with colorimetric index figures. He does not regard the Rosenthal test as of practical value as a diagnostic aid, except possibly in relation to the complications of pregnancy. Information of equal or greater value may be obtained by means of the much simpler icterus index test. The icterus index is of definite diagnostic value in distinguishing between the primary and the secondary types of anemia. Information of value may be obtained in cases in which obstruction of bile ducts occurs. In fact, the icterus index test is a test of considerable practical value to the clinician. The information obtained is of quantitative value and is easily obtained with little technical skill, expenditure of time and apparatus.

Estimation of Gastric Secretion and Discharge.—A method is described by Bloomfield and Keefer by which may be determined simultaneously the rate of gastric secretion and discharge, as well as other details of gastric function.

Erythrocyte Sedimentation Reaction and Serum Flocculation.—Depending on the toxicity of a disease process, a proportional increase in the erythrocyte sedimentation reaction and the ability of flocculation of the plasma and serum, as determined by the Frisch and Starlinger, Gerlóczy and Mátéfy reactions, was found by Rubin. The Darányi reaction was negative in forty cases studied.

Seasons and Acute Diabetes.—The case records of 1,000 patients with diabetes were studied by Adams. In this group there were 317 cases that could be classified as acute and in which the disease began so suddenly that there could be no question as to the time. Seventy-seven and three-tenths per cent of the patients studied came from Minnesota, Montana, Michigan, Nebraska, the Dakotas, Iowa, Wisconsin, northern Illinois and central southern Canada. The possible relationship between the onset of acute respiratory infections and the onset of diabetes is obvious. Diabetes of the acute progressive form, as seen in the Middle West, is a disease that begins more frequently in the fall, winter and spring than in the summer. A more sedentary life and a greater incidence of acute respiratory infections during this period suggest a combination of circumstances favorable for the precipitation of diabetes. Diabetes is a disease that gradually increases in incidence with age up to 60, after which there is a sudden decline in frequency, due probably to the falling off of the population of persons over 60. It is slightly more prone to affect males than females.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 315-377 (June) 1926

Use of High Frequency Currents from Surgeon's Standpoint. A. D. Willmoth, Louisville, Ky.—p. 315.
Diathermy in Gynecology and Genito-Urinary Practice. B. H. Hager, Madison, Wis.—p. 326.
Carbon Arc Light Lamp. A. Stein, Wiesbaden, Germany.—p. 334.
Electrical Aspects of Endothermy. J. G. Maupin, New York.—p. 343.
Treatment of Burns by Ultraviolet Light. E. B. Kessler, St. Joseph, Mo. —p. 347.

Arkansas Medical Society Journal, Little Rock

23: 1-16 (June) 1926

Hypertrophied Thymus. N. D. McCormack, Fort Smith.—p. 1.
Maternal and Child Hygiene. M. W. Koenig, Little Rock.—p. 4.

Boston Medical and Surgical Journal

194: 1105-1154 (June 17) 1926

Interrelations of Physicians and Hospital. W. Darrach, New York. —p. 1105.
Orthopedic Work in Boston Floating Hospital. L. A. O. Goddu, Boston. —p. 1111.
Season of 1925 in Boston Floating Hospital. L. W. Smith, Boston. —p. 1120.

194: 1155-1204 (June 24) 1926

*Diabetic Gangrene: Value of Insulin in Treatment. H. Blotner and R. Fitz, Boston.—p. 1155.
*Insulin in Infant Feeding. H. Green and G. Robbins.—p. 1162.
Feeding of New-Born Infant from Obstetrician's Point of View. F. C. Irving, Boston.—p. 1167.
*Habitual Vomiting, Inanition and Constipation in Child Associated with Megacolon. S. M. Jordan, Boston.—p. 1168.
Value of Preventorium in Tuberculosis Work. W. A. Griffin, Sharon, Mass.—p. 1171.
Decline of Mortality from Tuberculosis Among Infants and Children. A. K. Krause, Baltimore.—p. 1173.

Diabetic Gangrene.—Blotner and Fitz report on a clinical study of sixty-nine cases of diabetic gangrene. In their experience, gangrene has been a relatively frequent complication of diabetes, occurring in 7 per cent of all diabetic patients admitted to the hospital. Gangrene usually depends on obliterative vascular lesions in the extremities of elderly diabetic patients, with superimposed infection, thrombosis or osteomyelitis. It may, however, occur in young people with essentially normal blood vessels and may be of infectious origin. It is likely to recur so that one attack does not prevent subsequent attacks. The underlying cause of the vascular disease encountered in the majority of cases of diabetic gangrene is unknown. Syphilis was of but little importance as an etiologic factor in these cases, and the relation of the biochemical changes encountered in diabetes to the development of arteriosclerosis was a matter of speculation. Trauma, often of a very minor nature, was the immediate cause of the gangrene in 65 per cent of cases. More cases originated during the winter than during the summer months. Two patients developed gangrene while at rest and under observation in the hospital. Twenty-three per cent of the patients in this series died while under treatment in the hospital. The most important immediate cause of death was infection, at times developing as an overwhelming general infection from a small local lesion. Other less important causes of death were shock, or unavoidable vascular accidents. Gangrene is often a preventable complication of diabetes. The avoidance of dirt, of minor injuries, of cold hands and feet and of too sedentary a life are important prophylactic measures against gangrene. The treatment of gangrene consists in the employment of medical or surgical measures. Experience with the medical treatment of gangrene has not been noteworthy. In comparing cases of diabetic gangrene in which the treatment was surgical in some instances with and in others without the administration of insulin, it appears that insulin has afforded a means for rapidly desugarizing patients before operation and for allowing them to take a liberal diet during the period of convalescence from operation.

Use of Insulin in Infant Feeding.—Green and Robbins report good results from the use of insulin in the treatment of malnourished infants. The dose of insulin was based on the ratio of 1 unit of insulin per 15 Gm. of carbohydrate in the diet.

Habitual Vomiting: Inanition and Constipation.—The treatment followed by Jordan in his case consisted of putting the colon as completely at rest as is possible. The boy remained at rest in bed for three weeks on a diet low in colonic residue and free of chemical irritants to the colon. Heat and antispasmodic drugs were administered for a time. After four weeks no further medication was given, and cathartics or enemas have never been given since the beginning of treatment.

Georgia Medical Association Journal, Atlanta

15: 173-221 (May) 1926

Cancer of Pancreas and Bile Passages. D. C. Elkin, Atlanta.—p. 173.
Malignant Diseases of Colon, Cecum and Appendix. E. C. Davis, Atlanta.—p. 175.
Cysts of Mesentery. C. Usher, Savannah.—p. 179.
Maxillary Sinusitis. B. M. Cline, Atlanta.—p. 181.
Appendical Abscess. H. R. Donaldson, Atlanta.—p. 187.
Appendicitis in Childhood. W. W. Battey, Augusta.—p. 189.
Radium Treatment of Four Hundred and Twenty-Nine Cases of Cervix Carcinoma. A. C. Primrose, Americus.—p. 194.
Middle Ear Diseases: Complications and Sequelae. L. E. Brawner, Atlanta.—p. 198.

Journal of Cancer Research, New York

10: 1-159 (April) 1926

*Effect of Sodium on Cell Division. C. Packard, New York.—p. 1.
*Inheritance Behavior of Cancer as Simple Mendelian Recessive. M. Slye, Chicago.—p. 15.
*Chemotherapeutic Experiments with Coal Tar Dyes on Spontaneous Mouse Tumors. B. T. Simpson and M. C. Marsh, Buffalo.—p. 50.
*Iodine Irritation Does Not Produce Cancer. J. Rosenstirn, New York.—p. 61.
*Gye's Hypothesis of Etiology of Malignant Tumors. M. J. Harkins, J. F. Schamberg and J. A. Kolmer, Philadelphia.—p. 66.
*Experimental Tumor in White Rat. L. Herly, New York.—p. 102.
Immunity to Tumor Growth. H. Chambers and S. Russ, London.—p. 109.
Immunization of Cancer Bearing Mice. S. Itami, London.—p. 115.
*Immunizing Power of Normal Mouse Tissues Against Transplantable Carcinoma. S. Itami, London.—p. 128.
Enzyme Action. XXXVII. Comparative Lipase Actions of Human Tumors. K. G. Falk and H. M. Noyes, New York.—p. 146.

Effect of Sodium on Cell Division.—The results of Packard's experiments suggest that the rate of growth of rat tumors is directly associated with the ratio between calcium and sodium in the blood.

Cancer Inheritance a Mendelian Recessive.—In every one of more than 5,000 primary spontaneous neoplasms, including nearly every type known in human pathology studied by Slye, the inheritance behavior of cancer susceptibility has been that of a simple mendelian recessive.

Experimental Coal Tar Cancer.—Simpson and Marsh's purpose was to test representatives of all the major chemical groups into which the innumerable coloring matters derived from coal tar are classified, and to this end they selected seventy actual or potential dyes. No attempt was made to select toxic compounds, to combine them with metals, or to confine them to agents having medicinal, vital staining, or tumoraffin properties, but rather to seek any organic bodies in this group which might in any way influence growth of spontaneous tumors and, hence, furnish a possible clue to specific or general action in chemotherapy. The results have been entirely negative.

Iodine Not a Cancer Producer.—Various iodine preparations, both alcoholic and aqueous, were painted by Rosenstirn for eighteen months on the skin of 200 white mice known to be susceptible to cancer; they produced a local infiltration only with lymphocytes and fibroblastic elements. At a later stage, a hyperplastic fibrosis resulted, encroaching on the glandular structures of the skin. No hyperkeratosis could be observed at any stage.

Gye's "Specific Factor" in Tumor Production.—Investigations made by Harkins, Schamberg and Kolmer throw considerable doubt on the destruction of the infectivity of the "specific factor" prepared according to Gye's technic. They cannot confirm the evidence of growth of the virus of the Rous chicken sarcoma in subcultures, nor can they corroborate the statement that the so-called specific factor acts by reason of the presence of a chemical substance. The authors' results suggest that the "specific factor" is in reality nothing more than a suspension of attenuated living virus which may or may not produce a tumor depending on the fowl's susceptibility or resistence.

Experimental Tumor in Rats.—Only one of sixteen rats surviving for 444 days after being subjected to skin painting with coal tar was found on the five hundred and eleventh day to have a skin horn with an underlying tumor infiltrating the skin and presenting all the characteristic appearances observed in the tar cancers produced in the mouse.

Immunizing Power of Normal Mouse Tissues Against Carcinoma.—Itami asserts that resistance to tumor transplantation can be brought about by previous treatment with some, but not all, of the derivatives of all three germ layers. Analysis of the immunizing power of the blood cells shows that washed erythrocytes are ineffective, and that both the granular leukocytes and lymphocytes will elicit resistance, the latter being somewhat more efficient than the former.

Journal of Clinical Investigation, Baltimore

2: 409-455 (June 20) 1926

*Formed Elements in Urinary Sediment of Normal Individuals. T. Addis, San Francisco.—p. 409.
*Effect of Some Physiologic Variables on Number of Casts, Red and White Blood Cells and Epithelial Cells in Urine of Normal Individuals. T. Addis, San Francisco.—p. 417.
*Skin Capillaries in Cases of Polycythemia Vera. G. E. Brown and C. Sheard, Rochester, Minn.—p. 423.
*Cardiac Output in Pneumonia in Dog. T. R. Harrison and A. Blalock, Nashville, Tenn.—p. 435.

Formed Elements in Urinary Sediment.—Addis gives the averages and ranges of variation in the twelve-hour rates of excretion of casts, red and white blood cells and epithelial cells found in urine obtained from seventy-four normal persons. The averages of eighty-two counts on these subjects were: casts, 1,040; red blood cells, 65,750; white blood cells and epithelial cells, 322,500. The type of cast found was the hyaline variety. There were only three instances in which a single epithelial or granular cast was discovered. The hyaline casts only rarely contained any cell inclusions, and fat droplets were never seen.

Formed Elements in Normal Urine.—Quantitative determinations made by Addis of the number of formed elements in the urine of normal persons failed to show that either bodily movements of various types or the ingestion of a large amount of protein in the form of meat had any statistically significant effect.

Skin Capillaries in Polycythemia Vera.—Brown and Sheard state that the large increase in the circulating volume of erythrocytes in cases of polycythemia vera produces distention of the blood vessels, the venous vessels assuming the larger portion of this increase. The capillaries of the skin become distended, more markedly in their venous portion; and additional capillaries are formed. These changes have been studied quantitatively by photomicrographic methods, and have been compared to similar data obtained from normal subjects. The ratio of the total area of visible capillary blood to a unit area of skin is determined and found to be definitely increased. The demonstrable increase in the size and number of the capillaries exceeds the changes in the blood. There is a gradual decrease in the size and number of capillaries with reduction of the cell volume.

Cardiac Output in Pneumonia.—The output of the heart of the dog has been studied by Harrison and Blalock by the Fick method. In pneumonia the cardiac output is usually increased. When the infection is of short duration and either mild or overwhelming, the increase is less than in the severe, well developed pneumonia of longer duration. The increase in cardiac output appears to bear little relation to changes in oxygen consumption, but appears to depend to some extent on anemia and to a greater extent on anoxemia. On the assumption that the cardiac output is also increased in pneumonia in man, heart failure is to be ascribed to the increased strain on the circulation rather than to weakness of the myocardium. From this point of view, oxygen and digitalis appear to be definitely indicated, whereas the value of caffeine and camphor is questionable.

Journal of General Physiology, Baltimore

8: 403-507 (June 20) 1926

Physiology of Self Sterility in Plants. E. M. East, Boston.—p. 403.
Transplantation and Potential Immortality of Mammalian Tissues. L. Loeb, St. Louis.—p. 417.
Relations of Individual Ampullae of Semicircular Canals to Individual Eye Muscles. I. Horizontal Canals. S. S. Maxwell and O. L. Huddleston, Berkeley, Calif.—p. 441.
Effect of Pure Protein Solutions and Blood Serum on Diffusibility of Calcium. R. F. Loeb, New York.—p. 451.
Analysis of Growth of Normal White Mouse Into Its Constituent Processes. T. B. Robertson, Adelaide, South Australia.—p. 463.

Journal of Industrial Hygiene, Baltimore

8: 257-290 (June) 1926

Significance of Zinc in Living Organism. K. R. Drinker and E. S. Collier, Boston.—p. 257.
Incidence of Disease Among Hospital Patients, with Reference to Occupation. E. H. Lewinski-Corwin and A. E. Conover, New York.—p. 270.
Mild Cyanide Poisoning: Case. D. C. Parmenter, Boston.—p. 280.
Industrial Surgeon's Treatment of Fractures. L. Stewart, Clearfield, Pa. —p. 283.

Laryngoscope, St. Louis

36: 313-390 (May) 1926

Pathology of Deaf-Mutism. F. R. Nager, Linck, Switzerland.—p. 313.
Acute Mastoiditis Without Apparent Middle Ear Symptoms. M. A. Weinstein, Philadelphia.—p. 320.
Should Use of Terms First, Second and Third Degree Nystagmus Be Continued? G. W. Mackenzie, Philadelphia.—p. 325.
Perforation of Nasal Septum. L. Blumenfeld, New York.—p. 333.
Two Cases of Brain Abscess in Patients Suffering from Nasal Accessory Sinus Disease. R. E. Parrish, Washington, D. C.—p. 336.
Lipoma of Pharynx. F. R. Herriman, New York.—p. 339.
Tonsillar Infection as Cause of Ménière's Disease. J. Daland, Philadelphia.—p. 345.
Agranulocytic Angina: Case with Fracture of Tibia. R. J. Hunter, Philadelphia.—p. 348.
Acute Laryngeal Edema. D. N. Husik, Philadelphia.—p. 352.
Bronchoscopic Treatment of Lung Suppuration: Posttonsillectomy Type. M. C. Myerson, New York.—p. 356.
Low Perforation of Trachea from Gunshot Wound: Case. T. J. Carmody, Danville, Ill.—p. 362.
Acute Infection of Epiglottis and Larynx: Tracheotomy and Recovery. L. Daily and N. A. Allen, Houston, Texas.—p. 367.
Foreign Bodies in Esophagus with Respiratory Symptoms Complicating Diagnosis: Four Cases. J. B. Naftzger and T. R. Gittins, Sioux City, Ia.—p. 370.

New York State Journal of Medicine, New York

26: 489-534 (June 1) 1926

*Hay-Fever and Asthma. W. G. Lewi, Albany.—p. 489.
Painful Disabilities of Fore Foot (Metatarsalgia). D. E. McKenna, New York.—p. 494.
*Biochemical Metabolic Blood Origin of Asthma and Its Scientific Prevention. G. N. Jack, Buffalo.—p. 502.

26: 535-584 (June 15) 1926

Syphilis of Stomach. S. S. Oppenheimer, B. B. Crohn, A. Winkelstein and J. M. Marcus, New York.—p. 540.
Pulmonary Syphilis. G. G. Ornstein, New York.—p. 541.
Treatment of Ataxia of Tabes. M. Crossman, New York.—p. 546.
Labyrinth Tests as Aid in Diagnosis of Syphilis of Central Nervous System. R. Almour, New York.—p. 547.
Treatment (Fordyce-Rosen) of Congenital Syphilis in Infants and Young Children. H. Sherwood, New York.—p. 550.
Therapy of Syphilis. L. Chargin and A. Stone, New York.—p. 551.
Demonstration of Spirochetes. A. Jacoby, M. Nemser and W. Seckel, New York.—p. 552.
Syphilis in Negro. H. Fox, New York.—p. 555.
Kahn Test for Syphilis. R. L. Kahn, Lansing, Mich.—p. 557.
Books and Periodicals on Syphilis. F. Place, New York.—p. 558.
What Price Syphilis? W. F. Snow and W. M. Brunet, New York.—p. 560.
Syphilis in Pregnancy. A. C. Beck, New York.—p. 563.
Treatment of Syphilis. J. H. Stokes, Philadelphia.—p. 564.
Syphilis from Standpoint of Internist. U. J. Wile, Ann Arbor.—p. 570.

High Frequency Treatment of Hay-Fever and Asthma.—Reporting on the results accruing from the use of high frequency electricity in the treatment of hay-fever and asthma, Lewi says that of all the cases of hay-fever and asthma treated, 91 per cent showed satisfactory improvement. Of the cases reporting asthma as one of the symptoms, 95 per cent were markedly improved.

Asthma Is of Blood Origin.—A study of 1,431 cases of asthma has clinched Jack's belief that asthma is of blood origin and not a nerve reflex or spasm. He maintains that there are three well defined vicious circles of asthma; namely, the lymphocytic, the toxic-leukocytic and the anemovascular. From thirty minutes to two or more weeks before an attack of dyspnea, the nutrition, metabolism, blood and lymph, of the body physicochemics of the asthmatic patient are unusually distributed or perverted, as manifested by polyuria, a coated tongue, flatulency, indicanuria, chyluria, acidosis or occasionally glycosuria. The stools are generally toxic, putrid and alkaline with a rotten egg or meat odor, or they are acid, gaseous, fermenting with a disgusting, irritating, penetrating odor, often showing mucus and particles of undigested food. This disturbed nutrition produces toxic substances or deleterious chemical reagents that, when absorbed from the intestine by the lymph and blood, either in the form of gases, liquids or putrefactive alkaloids, so interfere with the chemistry of the asthmatic patient's unstable blood that it disintegrates. After the blood disintegrates, it becomes loaded with a waste and useless material which must be dumped and will be dumped along the line of least resistance, which in the asthmatic patient is the mucous membranes of the head and air tubes. The disintegrated material must be eliminated from the blood by starvation, the drinking of hot water, cathartics, as castor oil and liquid petrolatum, equal parts, or cascara, and by diuretics and expectorants. Cathartics that increase the viscosity of the blood, such as epsom salt should not be used. The blood should be kept slightly plus in alkalinity by the manipulation of the diet and, occasionally, the administration of alkalis. When there is any tendency to edema, salt should be restricted. The rechemistration of the asthmatic patient's unstable blood must be assisted by prescribing foods that contain the deficient blood chemicals and that are rich in vitamins or chlorophil and protoplasm.

Philippine Islands Medical Association Journal, Manila

6: 149-182 (May) 1926

Dystocia Due to Ball-Valve Action of Fetal Head: Five Cases. M. Tolentino, Manila.—p. 149.
*Calcium Content of Blood in Leprosy. I. Concepcion and J. Salcedo, Manila.—p. 154.
Blood Grouping of Filipinos. W. Pascual, Manila.—p. 157.
*Local Treatment of Burns. A. Y. Mandanas, Manila.—p. 161.

Calcium Content of Blood in Leprosy.—Determination of the calcium content of the blood of patients in various stages and of different forms of leprosy under treatment revealed that the values for calcium in all the cases examined, except paroled and suspect cases, were within the normal limits. The average calcium found in cases of less than one year duration was much less than in those of more than one year duration. No marked difference was noticed in the two types of leprosy. Concepcion and Salcedo assert that the slight increase in the calcium content observed in patients that have recovered and have been paroled was not due to the effect of the injection of ethyl ester.

Local Treatment of Burns.—The treatment of burns advocated by Mandanas consists of washing the burned surface with warm sterile water, or with 2 per cent sodium bicarbonate solution or any mild antiseptic solution, to remove the foreign bodies. All desquamated skin is carefully trimmed. All blebs are punctured and the contents gently pressed out. The surface is dried gently with sterile gauze or absorbent cotton, and sterilized powder, as dermatol, thymol iodide, zinc oxide, or zinc stereate, is thinly and evenly dusted on the burned area. The bed is placed in a part of the ward in which there is plenty of air and sunshine, but so as to avoid exposure of the patient directly to the sun.

Philippine Journal of Science, Manila

29: 447-612 (April) 1926

*Constancy of Types of B. Dysenteriae. K. I. Morishima, Manila.—p. 447.
Illicit Beverages. R. T. Feliciano, Manila.—p. 465.
Philippine Flora, II. E. D. Merrill, Berkeley, Calif.—p. 475.
Two New Fishes from Lake Lanao. A. W. C. T. Herre, Manila.—p. 499.
Morphology and Tectonics of North Coast of New Guinea. J. Zwierzycki. —p. 505.
New Stephanidae from Borneo and Philippine Islands. E. A. Elliott, London.—p. 517.
New Muscoid Flies of Oriental, Australian and African Faunas. C. H. Tyler-Townsend, São Paulo, Brazil.—p. 529.
Opiliones from Mount Maquiling in Luzon. C. F. Roewer, Bremen, Germany.—p. 545.
Syrphids (Diptera) of Philippines and Malaya. P. Sack, Frankfort-on-the-Main, Germany.—p. 563.

Constancy of Types of Bacillus Dysenteriae.—As far as can be concluded from his experiments, it appears to Morishima that the classification, grouping and subgrouping of *B. dysenteriae* are not of such importance as some authors appear to believe. The Shiga-Kruse group, as far as his experiments are concerned, appears to be stable, as it was impossible to induce any of the numerous cultures of this type to ferment mannite. In the other main group, however, which is characterized by its ability to ferment mannite, there

appears to be considerable variability in the fermentative property of certain carbohydrates other than mannite. The subgrouping of the mannite fermenters, therefore, appears to be of little importance, and all the members of this main group should be considered as more or less interchangeable variants. It appears, therefore, that mannite is the most important differential carbohydrate in the grouping of dysentery bacilli.

Missouri State Medical Association Journal, St. Louis

23: 201-236 (June) 1926

Responsibility of Organized Medicine to Public. E. P. North, St. Louis.—p. 201.
*Differential Diagnosis of Various Types of Spinal Cord Lesions. E. Sachs, St. Louis.—p. 204.
Ductless Gland Disorders: Complaints Referable to Other Systems. W. Engelbach, St. Louis.—p. 206.
Id. Gynecologic Conditions. W. H. Vogt, St. Louis.—p. 209.
Id. Diseases of Nose and Throat. E. T. Senseney, St. Louis.—p. 210.
Id. Diseases of Eye. M. Wiener, St. Louis.—p. 211.
Id. Cardiovascular Disturbances. D. Luten, St. Louis.—p. 213.
Id. Dermal Lesions. M. F. Engman, St. Louis.—p. 214.

Spinal Cord Lesions.—Sachs insists that every spinal lesion that shows a focal level has not been given a fair chance unless it has been explored. In 132 laminectomies, his mortality has been 12.7 per cent but 7 per cent of these patients died from their disease and not from operation.

Nebraska State Medical Journal, Norfolk

11: 209-248 (June) 1926

Physician and Progressive Thought. H. J. Lehnhoff, Lincoln.—p. 209.
Staphylococcus Septicemia. B. C. Russum, Omaha.—p. 214.
*Protozoan Infections of Bowel in Nebraska. G. W. Covey, Lincoln.—p. 220.
Diagnosis of Some Common Eye Diseases. S. R. Gifford, Omaha.—p. 222.
Crooked Backs. J. E. M. Thomson, Lincoln.—p. 230.
Pathology of Malnutrition. 14. Acid-Base Equilibrium. V. E. Levine, Omaha.—p. 233.

Protozoan Infections of Bowel in Nebraska.—Covey feels that protozoan infestations of the intestinal tract are increasing in number in Nebraska. He reports six cases of *Endameba histolytica*, four of *Chilomastix* and one of *Trichomonas* infestation. Most of these patients had never been out of the temperate zone and, excepting two, have practically always lived in eastern Nebraska or western Iowa. Of the five cases of *Endameba histolytica* infestation, two ended fatally as a direct result of this infection.

New Jersey Medical Society Journal, Orange

23: 261-328 (June) 1926

Infant Feeding. J. H. Marcus, Atlantic City.—p. 261.
Cryptic Injuries. D. B. Allman, Atlantic City.—p. 263.
Treatment of Spiral Fractures. D. Gordon, New York.—p. 269.
Control of Measles, Diphtheria and Scarlet Fever. J. F. Anderson, New Brunswick.—p. 273.
Activities of Isolation Hospital. F. A. Pringle, Belleville.—p. 279.
Differentiation of Smallpox from Chickenpox. E. D. Newman, Newark.—p. 283.
Diphtheria and Schick Testing. J. W. Gardam, Newark.—p. 286.
Scarlet Fever and Measles. E. E. Worl, Newark.—p. 287.

New Orleans Medical and Surgical Journal

78: 793-872 (June) 1926

Sterility: Air Insufflation as Aid in Diagnosis. P. Graffagnino, New Orleans.—p. 798.
Gallbladder Disease: Metabolic Aspect. D. N. Silverman, New Orleans.—p. 801.
*Mercurochrome Intravenously in Urology. H. W. E. Walther, New Orleans.—p. 804.
Diarrhea. F. S. Hill, Grenada, Miss.—p. 806.
*Quinidine and Ouabain in Certain Cardiac Diseases. C. Jamison, New Orleans.—p. 809.
Addison's Disease: Three Cases, One in Negro. I. I. Lemann, New Orleans.—p. 814.
*Splenectomy. I. Cohn, New Orleans.—p. 820.
*Pellagra: Hydrochloric Acid in Stomach Contents. J. B. Guthrie, New Orleans.—p. 830.
Headaches. C. D. Blassingame, Memphis, Tenn.—p. 836.

Status of Mercurochrome in Urology.—Walther's experiences with intravenous mercurochrome-220 soluble in urology convince him of its value, particularly in the treatment of those cases which fail to respond promptly to the accepted methods of therapy universally employed. He says that small doses, frequently repeated, will give satisfactory results and are not injurious.

Use of Ouabain in Cardiac Cases.—Jamison's experience with ouabain, principally by the intravenous route, in cases of aortic regurgitation and in the large hearts of syphilis with failure of the left side of the heart, has been very satisfactory. He says that it has saved life and restored comfort to many patients, who would not have been helped by the measures in common use. Dyspnea is relieved very quickly.

Splenectomy.—Cohn has found splenectomy in properly selected cases an operation that results in great benefit to the patient. Rupture of the spleen, splenic anemia, hemolytic jaundice, and thrombocytolytic purpura represent the group from which the greatest benefits may be expected.

Achlorhydria in Pellagra.—In a series of thirty-five cases of pellagra, Guthrie has encountered a larger percentage of cases with entire absence of hydrochloric acid in the gastric contents than has occurred in tabulations published by others. He is inclined to consider the lack of hydrochloric acid as of some diagnostic value in this disease. In a doubtful case presenting a normal hydrochloric acid content, he would consider its presence somewhat against the diagnosis of pellagra.

Northwest Medicine, Seattle

25: 285-340 (June) 1926

Celiac Disease. J. H. Hess, Chicago.—p. 285.
Postoperative Pulmonary Abscess. E. Holman, San Francisco.—p. 290.
Pulmonary Abscess. C. R. Castlen, Seattle.—p. 294.
Surgical Treatment of Lung Abscess. T. W. Buschmann, Seattle.—p. 297.
Fluoroscopic Examination of Chest. W. A. Smith, Bellingham, Wash.—p. 300.
Service of Radiologist to General Practitioner. J. Aspray, Spokane.—p. 303.
Septicemia. H. C. Bean, Portland, Ore.—p. 306.
*Appendicitis in Infant. P. W. Sweet, Centralia, Wash.—p. 310.
*Effect of Impaired Vision on Lincoln's Personal Habits. E. E. Maxey, Aberdeen, Wash.—p. 310.
Intra-Ocular Hemorrhage. C. W. Shannon, Seattle.—p. 312.
Rôle of Skin in General Medicine. L. B. Kingery, Portland, Ore.—p. 314.
Industrial Medicine: Relation to State Medicine. N. R. Wallentine, Sandpoint, Ida.—p. 317.
*Butesin Picrate in Eye, Ear, Nose and Throat Surgery. J. G. Parsons, Lewistown, Mont.—p. 322.
*Simple Device for Treating Cervical Gonorrhea. A. Poska, Seattle.—p. 323.

Appendicitis in Infant.—Sweet reports a case of suppurative appendicitis, occurring in an infant, aged 16 months. The appendix was not of easy access, so it was not removed. Drainage was instituted. The child made an uneventful recovery.

Abraham Lincoln's Vision.—Maxey asserts that Lincoln was a sufferer from some type of heterophoria (eye muscle imbalance), very probably a hyperphoria or cyclophoria. Certain of Lincoln's habits are referred to as supporting this assumption.

Butesin Picrate as Anesthetic.—The anesthetic value of butesin picrate is extolled by Parsons. The 1:2,000 aqueous solution, producing almost instantaneous superficial anesthesia, makes it useful in the removal of superficial foreign bodies. The 1 per cent ointment is valuable as a postoperative dressing, and in the treatment of burns and ulcers of the cornea. The aqueous solution of butesin picrate exerts a beneficial sedative and antiseptic effect in hyperesthetic rhinitis and after nasal operations and for the removal of tonsils. The 1 per cent ointment is of value for impregnating gauze employed in packing the nose after septum or antrum operations. A 5 per cent mixture of butesin picrate with acetylsalicylic acid, 95 per cent, makes a very useful powder for insufflation into the tonsillar fossae after tonsillectomy. The postoperative discomfort is greatly reduced by the use of this powder.

Treatment of Cervical Gonorrhea.—The device used by Poska consists of a section of glass tubing from 20 to 24 cm. in length, and from 5 to 8 mm. in diameter, with an inside diameter of from 2 to 6.25 mm. One end has a 2 to 2.5 cm. bevel, while the opposite end is ground square with the sharp

edge rounded off. The beveled end is designed to facilitate the loading of the device and to minimize the soiling of hands or clothing with the medicament. A glass rod for the larger sizes and the long round wooden applicator for the small sizes, to act as a plunger, complete the apparatus.

Occupational Therapy and Rehabilitation, Baltimore

5: 165-242 (June) 1926

Problem of Expatient. W. I. Hamilton, New York.—p. 165.
Program of Occupational Therapy for Tuberculous Patients. B. W. Carr, Washington, D. C.—p. 175.
Articles Produced by Tuberculosis Patients in Occupational Therapy Work. J. A. Smith, New York.—p. 193.
Activities of Junior League of Indianapolis in Connection with James Whitcomb Riley Hospital. N. L. Brush, Indianapolis.—p. 197.
Whittling as Minor Craft in Occupational Therapy. S: H. Knowles, New Bedford, Mass.—p. 201.
Butterfly Decorations in Reed Trays. H. S. Deary, Oneonta, N. Y. —p. 207.

Oklahoma State Medical Association Journal, Muskogee

19: 140-167 (June) 1926

Pyelitis. W. J. Wallace, Oklahoma City.—p. 140.
Endamebiasis Complicated by Subphrenic Abscess. L. D. Long, Oklahoma City.—p. 144.
Well Baby Clinic. C. H. Hall, Oklahoma City.—p. 148.
Polycystic Kidney. J. Frischer, Kansas City, Mo.—p. 150.

Physical Therapeutics, Baltimore

44: 307-362 (June) 1926

Basic Principles of Curative Action of Electrical Energy. W. J. Turrell. —p. 307.
Ultraviolet Therapy. A. F. Hess, New York.—p. 319.
Electrically Heated Paraffin Bath. U. V. Portmann, Cleveland.—p. 333.
Diathermy in Treatment of Multiple Sclerosis. J. W. Stephenson, New York.—p. 336.
History of American Electrotherapeutic Association. G. B. Massey, Philadelphia.—p. 339.
Acute Pyelitis with Hyperpyrexia. V. C. Pedersen, New York.—p. 344.
Case of Renal Hematuria. M. C. L. McGuinness, New York.—p. 346.

Virginia Medical Monthly, Richmond

53: 141-206 (June) 1926

*Toxic Action of Digitalis on Heart Muscle. W. B. Porter, Roanoke. —p. 141.
Treatment of Breast Tumors. J. L. Rawls, Norfolk.—p. 145.
*Intravenous Administration of Gentian Violet and Mercurochrome in Sepsis. J. S. Horsley, Richmond.—p. 148.
Rationalistic View of Psychoneuroses. D. D. V. Stuart, Jr., Washington, D. C.—p. 154.
*Tuberculous Peritonitis Treated with Air Injections. N. Mercer, Richmond.—p. 157.
*Report on Sputum Examinations of 1,425 Cases of Pulmonary Tuberculosis. R. C. Eley and F. B. Stafford, Charlottesville.—p. 159.
Urinary Calculi. B. P. Seward, Richmond.—p. 162.
Prostatism. R. M. LeComte, Washington, D. C.—p. 168.
"Come Over into Our Village and Help Us." A. B. Grubb, Cripple Creek.—p. 172.
Occasional Causes of Failure in Regional Anesthesia for Hernia Operations. E. M. Hanrahan, Jr., Baltimore.—p. 173.
Endometrial Cell Invasions. A. L. Stavely, Washington, D. C.—p. 176.
Management of Lobar Pneumonia. A. E. Murray, Beaverdam.—p. 181.
Treatment of Acute Lobar Pneumonia. W. A. Cambell, Old Church. —p. 183.
Cancer of Gastro-Intestinal Tract Below Diaphragm. S. O. Black, Spartanburg, S. C.—p. 184.
Somatic Side of Mental Patient. V. B. Williams, Washington, D. C. —p. 186.

Toxic Action of Digitalis on Heart Muscle.—Porter reports five cases in which there was cardiac evidence of digitalis overdosage. The disturbance of rhythm observed in these patients closely paralleled that observed in animals poisoned with digitalis. In two instances there was observed an undoubted idioventricular rhythm having the characteristics of an ectopic ventricular tachycardia. In the third case there was a transition from normal Q R S complexes into a typical levocardiogram, indicating right bundle branch block. This appeared in paroxysms and disappeared after the withdrawal of digitalis, with evident improvement in the patient's clinical condition.

Gentian Violet and Mercurochrome in Sepsis.—In doses varying from 3 to 7 mg. per kilogram of body weight, properly prepared 0.5 to 1 per cent aqueous solutions of gentian violet were given by Horsley intravenously fifty-one times to thirty-eight septic patients, with decided improvement in twenty-one and with only three reactions. In cases of sepsis, in which gram-positive staphylococci were the sole or predominant etiologic organism, and in which the lesions were accessible to the blood stream, the intravenous use of gentian violet was justifiable and often most beneficial. In doses varying from 3 to 5 mg. per kilogram of body weight, freshly prepared, 1 per cent aqueous solution of mercurochrome-220 soluble was given intravenously, with subsequent improvement in only four cases of sepsis out of twelve treated. Sepsis caused by gram-negative organisms of the colon bacillus group and by the gonococcus showed most improvement in this series of eighteen injections. Nine moderate and two severe reactions occurred. An absence of reaction was usually followed by no definite improvement. The more severe the reactions (as characterized chiefly by the rise in temperature), usually the more definite and lasting was the improvement. Doses of less than 3 mg. per kilogram of body weight with either of the two dyes were of little, if any, value. Often several injections at intervals of one or several days were necessary to obtain the full therapeutic effect.

Air Injections in Tuberculous Peritonitis.—Mercer regards this form of treatment as the best for tuberculous peritonitis.

Results of Examination of Tuberculous Sputum.—Of 1,425 positive cases of pulmonary tuberculosis, in which Eley and Stafford examined the sputum, only 44 per cent showed tubercle bacilli. Emphasis is placed on repeated examinations of the sputum in any case in which there is cough and expectoration persistent for more than four weeks. The far advanced cases gave the most frequent positive results and the minimal cases the least.

West Virginia Medical Journal, Charleston

22: 281-336 (June) 1926

Drama of Surgery in West Virginia. C. R. Ogden, Clarksburg.—p. 286.
Duration of Passive Immunity in Measles Prophylaxis. G. M. Lyon, Huntington.—p. 291.
Differential Diagnosis of Syphilis and Focal Infection from Eye and Ear Manifestations. G. W. MacKenzie, Philadelphia.—p. 292.
Rational Procedure Leading Toward Diagnosis. R. Kessel, Charleston. —p. 301.
Chronic Nephritis: Classification and Treatment. G. H. Barksdale, Charleston.—p. 305.
Acute Parenchymatous Nephritis. W. R. Morris, Alpoca.—p. 308.
Painless Childbirth. N. Poliakoff, Huntington.—p. 312.
*Verminous Abscess. C. F. Fisher and W. P. Bittinger, Richwood.— p. 314.
Cancer of Mouth. J. C. Bloodgood, Baltimore.—p. 316.

Ascaris Lumbricoides Causes Intestinal Abscess.—Fisher and Bittinger report the case of a boy, aged 16, who complained of attacks of severe cramps in the region of the umbilicus. The entire abdomen was painful to touch, and the boy was unable to lie on his back or to extend his limbs. His bowels moved several times with pain, associated with dysuria. The point of greatest tenderness seemed to be midway between the umbilicus and the pubes in the midline. Rectal examination revealed midline tenderness high up in the pelvis, and a suggestive mass. A diagnosis was made of diffuse peritonitis, possibly of appendicular origin. Operation was done. The condition of the appendix did not explain the physical findings. In view of the rectal tenderness, the pelvis was explored. A dense firm mass was easily delivered and proved to be a part of the ileum. The ileum at a point about 18 inches from the cecum was very firm and rigid for the distance of about 9 inches, and of a dull, purplish red, exhibiting over its surface small ecchymotic spots. Midway in this area, situated at the amesenteric border, was an area even more firm than the rest, the size of an English walnut and raised above the surrounding tissue. On closer examination a small yellow point was seen near the edge of this elevated area. On manipulation the yellow point suddenly enlarged. It proved to be the tail of a worm, *Ascaris lumbricoides*. The worm seemed to be contained in a pocket, located in and formed by the wall of the bowel. No opening could be found between this pocket and the lumen of the bowel, and no gas escaped. The pocket contained about 1 drachm of yellowish brown fluid. No other worms could be found in the bowel by palpation.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

20: 147-220 (June 24) 1926

Immunization with Dead and Attenuated Trypanosomes. I. J. Kligler and I. Weitzman.—p. 147.
Second Case of Sleeping Sickness in Sudan Caused by Trypanosoma Rhodesiense. R. G. Archibald and D. Riding.—p. 161.
Development of Hookworm Larvae. II. P. A. Maplestone.—p. 167.
Transmission of Cutaneous Leishmaniasis to Man from Phlebotomus Papatasii. S. Adler and O. Theodor.—p. 175.
Case of Cerebrospinal Meningitis in Trinidad. J. L. Pawan.—p. 195.
Giardia Intestinalis Treated with Stovarsol. J. L. Pawan.—p. 197.
Pyelitis Associated with Endameba Histolytica. J. L. Pawan.—p. 199.
Infection with Lagocheilascaris Minor (Leiper). J. L. Pawan.—p. 201.
Development of Onchocerca Vulvulus Leuchart in Simulium Damnosum Theob. D. B. Blocklock.—p. 203.

British Journal of Radiology, London

31: 163-198 (May) 1926

Cholecystography in Diagnosis of Cholecystic Disease. R. D. Carman.—p. 163.
Food Suitable for Radiologic Examination. Colombier.—p. 175.
Surgical Diathermy in Treatment of Hemorrhoids. W. Bierman.—p. 178.
Therapeutic Value of Red Rays. G. M. Levick.—p. 185.
Motor Mechanism of Digestive Mucous Membrane. G. Forssell.—p. 189.

31: 199-238 (June) 1926

*Roentgenograms of Infarcts of Lung. G. Boehm.—p. 199.
Roentgenology of Pulmonary Anthracosis. L. Edling.—p. 207.
Hospital Radium Service. S. Russ and R. H. Somerset.—p. 218.

Roentgenograms of Lung Infarcts.—Boehm reports a case of infarct of the lung observed roentgenologically until after complete recovery had occurred. The case shows that a severe infarct of the lung may heal, without leaving traces sufficient for recognition of the nature of the healed process.

British Medical Journal, London

1: 977-1022 (June 12) 1926

*Preventive Medicine as Applied to Obstetrics. J. M. M. Kerr.—p. 977.
Diverticula of Esophagus. J. Morley.—p. 981.
*Radiation Treatment of Exophthalmic Goiter. J. H. D. Webster.—p. 985.
Treatment of Throat and Ear Cases in Children: Retrospect of Five Years' Work in Elementary Schools. H. Smurthwaite.—p. 986.
*Production of Immunity by Filtrates from Streptococci Isolated from Vagina in Pregnancy. M. E. Robertson.—p. 988.
Electrical Treatment of Tic Douloureux. W. J. Turrell.—p. 989.
Amblyopia with Hemorrhages Due to Tobacco and (?) Lead Poisoning. M. Gilchrist.—p. 990.
Glycosuria and Artificial Sunlight. C. Barrowman.—p. 990.
Intestinal Obstruction by Gallstone. D. J. B. Wilson.—p. 990.

Preventive Medicine in Obstetrics.—Remedial measures suggested by Kerr as necessary to lower maternal and infant mortality in childbed are: Hospital accommodations should be increased. All nursing homes and private houses in which women are received for their confinements should satisfy the health authorities. Power should be secured by the local health authorities to remove a patient from her dwelling house to hospital if the house is deemed unsuitable for a confinement. As far as possible, primiparas should have their confinements in a hospital or nursing home. It is of the very greatest importance that the training of maternity nurses should be extended, and that every two or three years they should have a revision course in an institution. Rubber gloves should be worn by midwives and nurses. A sterilized outfit should be supplied for the confinement. Better training of students in clinical midwifery is imperative. A period of continuous and uninterrupted training in obstetrics and gynecology is the best arrangement to secure satisfactory instruction in these departments. If general practitioners are to continue to undertake obstetric practice, it would be almost necessary for them to undergo revision courses in hospitals every two or three years.

Radiotherapy of Exophthalmic Goiter.—The radiologic view as to the treatment of exophthalmic goiter is put thus by Webster: Of those patients who are not cured by medical measures only a small percentage cannot be relieved by irradiation, while a large percentage are cured.

Production of Immunity Against Vaginal Streptococci in Pregnancy.—The results of Robertson's experiments suggest strongly that protection against the vaginal streptococci may be afforded by previous inoculation with the filtrates from their broth cultures. It is a question whether an antistreptococcal serum to be used for the treatment of puerperal fever might not be more potent and give more satisfactory results if made up of two components—an antitoxic and an antibacterial—the one to be obtained by the injection of streptococcal soluble toxins, the other by injection of the bacteria themselves in the usual way.

1: 1023-1072 (June 19) 1926

*Heredity in Relation to Mental Disease and Mental Deficiency. F. Mott.—p. 1023.
Hemorrhage About and After Menopause. W. F. Shaw.—p. 1026.
*Compression of Nerve Fibers. J. S. B. Stopford.—p. 1028.
*Efficacy and Standardization of Hemostatics. J. W. Pickering and A. Hemingway.—p. 1029.
Acute Duodenal Obstruction Due to Neonatal Volvulus. A. H. Baker and V. Mizen.—p. 1031.
*Case of Embolectomy. C. Gordon-Watson.—p. 1032.
Acute Suffocative Pulmonary Edema. I. Associated with Cardiac Disease. A. E. Hodder, S. M. Hebblethwaite, M. Rockfelt and E. V. Slaughter.—p. 1033.
Id. II. Occurrence in Children. S. McNaughton.—p. 1034.
Id. III. Fatal Type. E. Bulmer.—p. 1034.
Id. IV. Dry Cupping: Recovery. T. G. Garry.—p. 1034.
Scurvy Simulating Acute Intussusception. R. R. Foote.—p. 1035.
Cortical Localization of Vision. K. MacKenzie.—p. 1035.

Heredity and Mental Disease and Deficiency.—A study of 4,000 cards of relatives in the London County Council asylums and a large number of carefully recorded pedigrees, Mott says, has shown that certain types of insanity are very liable to hereditary transmission. They are: (1) involutional melancholia, (2) manic depressive insanity and (3) dementia praecox. Involutional melancholia in a grandparent may be followed, in the next generation, by manic depressive insanity, or dementia praecox in the third generation. A frequent sign of hereditary transmission was the existence of two, three, four or five members of the same co-fraternity affected with dementia praecox, manic depressive insanity or imbecility.

Compression of Nerve Fibers.—Attention is directed by Stopford to the frequent occurrence in spinal compression of a dissociated sensory loss, similar to that previously described as a result of compression of peripheral nerves. Since the first indications of this characteristic sensory disturbance may be discovered at a fairly early stage in the development of the compression and before the onset of profound paralytic symptoms, they may be regarded as a valuable aid to diagnosis. This often renders it possible to undertake the relief of compression before it has caused irreparable injury to the spinal cord. In the present state of knowledge, it is not possible to advance any explanation of the occurrence of this dissociation, but there is evidence which suggests that hypalgesia and thermohypesthesia may appear before actual degeneration of fibers has occurred in either the peripheral nervous system or the spinal cord.

Standardization of Hemostatics.—A method of standardizing the coagulant action of hemostatics is described by Pickering and Hemingway. Those hemostatics which precipitate blood plasma are said to be ineffective. Coagulen, thromboplastin, cephalin, protogulin, hemoplastin, fibrogen and 10 per cent solution of sodium citrate were found effective coagulants when the temperature of the blood is maintained at 37.5 C. Some are also effective at room temperature. Stress is laid on the maintenance of the temperature of the wound at 37.5 C. in the use of hemostatics. The experimental results recorded in this paper agree with the clinical observations on the efficacy of the hemostatics investigated, but are at variance with the findings of those investigators who have employed blood kept fluid by either oxalates or citrates.

Embolectomy.—On the day following confinement, Gordon-Watson's patient developed an embolus of the femoral artery. Under local anesthesia Gordon-Watson removed an embolus from the bifurcation of the artery with some recent thrombus

from above, passing a probe up the artery until blood flowed. The artery was closed with fine silk, and pulsation was restored to the limb immediately after the operation. Shortly after the patient was returned to bed, it was noted that pulsation in the femoral could not be obtained. The patient died the same evening, about three hours later. Before death pulsation was absent from both femorals. Postmortem examination showed that thrombosis had occurred in the right common femoral artery up to the bifurcation of the aorta and down to the junction of the external and internal iliacs on the left side. Mitral stenosis, bilateral pleural effusion, and chronic interstitial nephritis were also found.

Edinburgh Medical Journal

33: 329-400 (June) 1926

Relationship of Thymus and Testes to Growth. D. N. Paton.—p. 351.
Oxycephaly. D. M. Greig.—p. 357.
*Value of Sgambati's Test in Detection of Peritonitis in Children. G. H. Dodds.—p. 377.

Value of Sgambati Test in Detection of Peritonitis.—The Sgambatti test was carried out by Dodds in 177 cases. He does not regard the test as being pathognomonic of inflammatory infections of the peritoneum. Positive results were obtained in many cases in which no peritonitis existed, and the percentage of positive cases was as high in interval appendicitis as in acute generalized peritonitis. The test was positive in every case of pneumococcal peritonitis, while in peritonitis secondary to appendicitis 50 per cent of the results were negative. The fact that the reaction became apparent in a urine hitherto negative when the patient developed an acute infective disease is significant. It was demonstrated that the results of the tests were not affected by the reaction of the urine. Albumin, if present, had to be removed before the test could be carried out, and sugar did not occur in any of the specimens examined.

Indian Medical Gazette, Calcutta

61: 261-320 (June) 1926

Medical Aspects of Life Insurance in India. E. Houseman.—p. 261.
Principles in Testing of Cure. H. W. Action.—p. 271.
Suprapubic Lithotomy. S. C. Das Gupta.—p. 279.
"Pallang" (Penile Ornament): Dyak Curio. C. L. Samsom.—p. 283.
Severe Anaphylactic Reaction Following Injection of Amino-Sticurea. N. Chatterjee.—p. 284.
Empyema of Antrum of Highmore. J. F. Lobo.—p. 284.
Anaphylactic Asthma Successfully Treated by Peptone Injections. S. S. Attrish.—p. 285.
Malaria. K. C. Bannerjee.—p. 285.
Case of Cephalotetanus. K. S. Ranganathan.—p. 286.
Case of Endemic Funiculitis. J. Phillips.—p. 287.
Asthma. G. R. Rao.—p. 287.
Treatment of Tetanus. B. I. Kewalram.—p. 288.
Fever Due to B. Fecalis Alkaligenes. Y. S. Row.—p. 289.
Case of Ectopia Vesicae. M. D. David.—p. 290.
Pregnancy Complicated by Fibroma of Cervix Uteri. G. S. Aiyer.—p. 290.

Journal of Physiology, London

61: 305-464 (June 22) 1926

Conduction of Nervous Impulse in Narcotized Region of Nerve. S. Cooper.—p. 305.
Osmotic Pressure of Proteins of Human Serum and Plasma. E. B. Verney.—p. 319.
Blood Count and Body Temperature in Normal Rats. A. D. Stammers.—p. 329.
Relation of Work and Heat in Tortoise Muscle. J. Wyman, Jr.—p. 337.
Conduction of Respiratory Nervous Impulses Through Regions of Block Produced by Pressure. G. Briscoe.—p. 353.
Influence of Length on Responses of Unstriated Muscle to Electrical and Chemical Stimulation, and Stretching. F. R. Winton.—p. 368.
Action of Pituitary Extract on Pregnant Uterus of Rabbit. H. H. Knaus.—p. 383.
*Cellular Activity and Cellular Structure in Thyroid. W. Cramer and R. J. Ludford.—p. 398.
Venous Pressure of Eye: Relation to Intra-Ocular Pressure. W. S. Duke-Elder.—p. 409.
*Secretion of Pancreatic Juice. J. Mellanby.—p. 419.
Spleen and Resistance of Red Cells. D. Orahovats.—p. 436.
Determination of Hydrogen-Ion Concentration of Blood. L. E. Bayliss, P. T. Kerridge and R. C. Verney.—p. 448.
*Output of Hemoglobin and Blood by Spleen. E. W. H. Cruickshank.—p. 455.

Cellular Activity of Thyroid.—Conditions were established by Cramer and Ludford which induce intense activity and complete inactivity, respectively, of the thyroid glands. A very clear relationship could be demonstrated between the functional state of the gland and the mitochondria. In the resting glands, the mitochondria are barely visible. In the active gland, they show an enormous enlargement. The condition of the mitochondria presents, therefore, a criterion for the functional state of the gland, and may, as Goetsch has suggested, be useful in the study of pathologic conditions of the thyroid. The Golgi apparatus shows the same changes that have been observed in the other gland cells in rest and activity: a simple, contracted form in the resting cell, an enlarged convoluted form during activity, followed by a disintegration into granules. The significance of the mitochondrial changes from the point of view of cell mechanics is discussed. The mitochondria represent a mechanism by which the cell can produce great variations in surface energy within the cytoplasm. On the basis of accepted views such variations must be accompanied by changes in the distribution of the lipoids within the cytoplasm and the cell membrane. These changes, in turn, would affect the permeability of the cell.

Secretion of Pancreatic Juice.—Mellanby avers that the introduction of bile of an adequate reaction into the duodenum of a cat causes a copious secretion of pancreatic juice. The duration of pancreatic secretion after the injection of a given quantity of bile into the duodenum is determined mainly by the distribution of secretin in the intestinal mucosa. The immediate stimulus for the secretion of pancreatic juice is secretin. Secretin contained in the cells of the intestinal mucosa is carried into the portal blood associated with the bile salts contained in the fluid absorbed from the intestine. The facts offer an adequate basis for the appreciation of the severe digestive disturbances that occur in catarrhal jaundice.

Blood and Hemoglobin Output of Spleen.—A method is described by Cruickshank for estimating, in cats, the blood and hemoglobin output of the spleen without exposure of the organ. Corroboration is given to the fact that the spleen is a reservoir for blood. The capacity of acting as a reservoir for blood and of concentrating hemoglobin is a peculiar property of the spleen not shared by other muscular organs, e. g., the tongue.

Lancet, London

1: 1183-1240 (June 19) 1926

Freudian Psychology. C. S. Myers.—p. 1183.
Pathologic Action of Light on Eye. W. S. Duke-Elder.—p. 1188.
*Relationship Between Destruction of Tissue and Bactericidal Power of Blood. G. R. McCowen.—p. 1192.
*Great Dilatation of Left Auricle. C. F. T. East.—p. 1194.
*Neoplasms of Mediastinum. F. H. Young.—p. 1196.

Bactericidal Power of Blood.—After exposure to mustard gas by inhalation, subcutaneous injection and application to the skin, McCowen found the hemobactericidal power to increase; the more severe the exposure, the more pronounced this increase. A similar increase in the hemobactericidal power has been noted after the application of other tissue destroying substances such as hydrochloric acid, formic acid, and liquor epispasticus. No change in the hemobactericidal power is noted at the point of death after the injection of substances which do not produce tissue destruction. It is suggested that this increase of the hemobactericidal power is due to a considerable pouring out of the antibacterial elements from the leukocytes into the blood as the result of their disintegration. It would appear that there is some common factor at work; namely, the release of antibacterial elements from the leukocytes at the site of injury, influencing the bactericidal power of the blood.

Enormous Dilatation of Heart.—The greatest horizontal diameter of the heart of East's patient as it lay in the chest was about 10 inches (25.4 cm.). The pericardial sac was thickened. Its cavity was obliterated everywhere by adhesions. These were fairly fine over the left ventricle and could be separated, but over the right ventricle they were very dense. The right border of the heart, seen from the front, was formed by the left auricle, which projected well to the right from behind the right auricle. At the back the pericardial sac was adherent to the adjacent structures in the

posterior mediastinum. In the area in relation to the back of the left auricle, it was densely adherent to the medial part of the right leaf of the diaphragm over an area about 3 inches square. The whole heart weighed 31½ ounces (893 Gm.). On the whole, the shape of the heart, excluding the left ventricle, was globular. The right auricle was much dilated and could hold about half a pint. The inferior vena cava at the point of its junction with the heart had an internal circumference of 3½ inches (9 cm.). The pulmonary artery had an internal circumference, just above the valves, of 3½ inches. The aorta was small; the whole tube from the beginning throughout the arch only admitted a fairly large finger comfortably. Its internal circumference just above the valves was 2¼ inches (5.5 cm.). The left auricle was enormously dilated. Its capacity was about 1½ pints.

Neoplasms of Mediastinum.—Two cases are reported by Young. The first is one of a secondary neoplasm of the mediastinum with an *Aspergillus* infection. The second case was one of a neoplasm of the mediastinum, possibly primary, but probably secondary, associated with tuberculosis of the lung. Both cases from the clinical point of view were fairly typical of intrathoracic neoplasms, and the results of the roentgenographic examination were greatly in favor of that, and the condition was confidently diagnosed prior to the reception of sputum reports.

Medical Journal of Australia, Sydney

1: 569-592 (May 22) 1926

Peptic Ulcer. C. F. Pitcher.—p. 569.
Roentgen-Ray Diagnosis of Duodenal Ulcer. H. A. McCoy.—p. 574.
Lipiodol Injections as Diagnostic Agent. J. F. Mackeddie.—p. 577.
Central Rupture of Perineum: Case. A. G. E. Naylor.—p. 579.
Odontome from Bullock. J. B. Cleland.—p. 580.
*Unusual Case of Typhoid Fever. K. C. Ross.—p. 580.

1: 593-626 (May 29) 1926

Causes and Prevention of Maternal Morbidity and Mortality. H. Jacobs.—p. 593.

Negative Serology in Typhoid.—In Ross' case, at no time during the disease was any immunologic response evident as judged by repeated agglutination tests, but was regarded clinically as a case of typhoid and proved to be so at necropsy. Culture tubes were inoculated with blood, stools and urine taken during life, but no typhoid bacilli were grown; no reaction was obtained to the Widal test throughout the illness. Three hours after death, from the gallbladder, spleen and mesenteric lymph glands, there were cultured motile, gram-negative bacilli which did not ferment lactose, but yielded acid without gas in glucose and mannite and which were agglutinated with standard *Bacillus typhosus* (Penfold) to 1 in 8,000, but were not agglutinated in any dilution with serum for *Bacillus paratyphosus* A or B.

1: 627-658 (June 5) 1926

Maternal Morbidity and Mortality. H. Jacobs.—p. 627.
Case of Tetanus Neonatorum. M. J. Plomley.—p. 644.
Enchondromas of Larynx. J. J. Woodburn.—p. 645.

1: 659-688 (June 12) 1926

Workers' Compensation Act: Medicolegal Aspect as Applied to Insurance Companies. L. I. Skelton.—p. 659.
Medical Aspects of Workers' Compensation Act. J. Kennedy.—p. 661.
Infant Feeding. A. J. Turner.—p. 667.
Significance of Certain Pathologic Changes in Cerebrospinal Fluid. B. Corkill.—p. 672.
*Case of Striae Atrophicae. W. E. George.—p. 674.

Striae Atrophicae.—George relates the case of a girl, aged 17, who noticed "varicose veins" appearing over both buttocks. The skin affected was very tender, especially when she sat down or stooped, and there was continuous intense itching. The skin lesion has persisted, but there is now no pain, the only complaint being the presence of the lesions. The color of the marks varies; it is more noticeable after exertion or when she is menstruating. She has always been a delicate girl and always feels tired and languid. There is nothing of interest in the family history. On examination there were seen lines arranged symmetrically over the buttocks, resembling in appearance the striae gravidarum appearing on the abdomen of a woman in her first pregnancy. They had, however, a livid purplish color, not the pinkish color of striae gravidarum. They were distributed in parallel rows perpendicular to the direction of the lines of maximum tension of the skin when the patient leaned forward at the hips. The individual lines were irregular in outline and varied in length and were about 3 mm. wide. They commenced over the skin below the anterior superior iliac spines on each side and pursued an irregular course toward the folds of the buttocks. The arrangement was symmetrical. No definite cause for this condition could be found.

Practitioner, London

116: 389-440 (June) 1926

*Obstructive Jaundice. C. S. Wallace.—p. 389.
*Gallstones. R. P. Rowlands.—p. 394.
*Very Large Gallbladder. G. Robertson.—p. 400.
*Treatment of Exophthalmic Goiter. T. G. Moorhead.—p. 402.
Submaxillary Calculus. D. C. L. Fitzwilliams.—p. 411.
Frequency of Micturition in Infancy and Childhood. D. Paterson.—p. 418.
Diagnosis of Peptic Ulcer. C. Bull.—p. 422.

Gallbladder Drainage in Obstructive Jaundice.—When the surgeon is faced with a huge gallbladder and distended bile passages, Wallace asserts that great temporary relief and improvement of health can be produced by drainage of the gallbladder. External drainage is now abandoned, and it is only a question as to whether the gallbladder should be anastomosed to the stomach or the duodenum. It does not appear to matter which of these organs is selected for the opening as the discharge of bile into the stomach seems to produce no disturbance of digestion. The surgeon can choose the stomach or duodenum, according to which organ offers the easier operation.

Operations for Gallstones.—Rowlands stresses the point that operations for gallstones are very difficult and should not be undertaken lightly. Any one who undertakes this work should train himself thoroughly under a master. The main ideals are to do no harm and to remove all the stones, for they very rarely reform. Whenever possible, if the disease is limited to the gallbladder, especially in young persons, it is important to remove rather than to drain the gallbladder. If the cases are well chosen the mortality for cholecystectomy is less than that for cholecystostomy, and the after-results are infinitely better. It is important not to operate on the common duct during an acute attack of jaundice and especially of fever. It is much safer to wait for an interval and to prepare the patient adequately. Preliminary careful preparation, with injections of calcium chloride with plenty of water, and glucose by the rectum, adds greatly to the safety of the patient.

Enormously Distended Gallbladder.—Robertson's patient, aged 68, presented a large abdominal tumor occupying the right hypochondrium, right lumbar and part of the right iliac regions. Many joints showed rheumatoid arthritic changes. The diagnosis lay between a very much enlarged gallbladder and a hydronephrotic right kidney. At operation, the tumor proved to be a very large gallbladder distended to half the size of the adult head. The wall of the viscus was found to be nearly one-fourth inch thick. A large fistula, admitting two fingers, was found between the gallbladder and the second portion of the duodenum, near its junction with the first portion of the duodenum. The neck of the gallbladder embraced a very large, firmly impacted stone which weighed 2 ounces 30 grains (62 Gm.). The gallbladder was drained. The patient made an excellent recovery.

Medical Treatment of Exophthalmic Goiter.—Moorhead prefers medical to surgical treatment in these cases and asserts that thereby he can effect a cure in between 70 and 80 per cent of cases within six months. He orders rest in bed; an icebag is applied to the thyroid for at least two hours daily; a diet, largely vegetarian, is ordered; sedatives are given at night if required; very few visitors are allowed; bromide quinine, 5 grains (0.32 Gm.), three times daily, is given. Local septic foci are attended to, and intestinal stasis, if present, is got rid of by suitable means. Later, roentgenotherapy is given. By the end of six months from the beginning of treatment, the patient should be perfectly well.

Annales de Derm. et Syphiligraphie, Paris

7: 193-256 (April) 1926

*Lupus Erythematosus. J. Schaumann.—p. 193. C'en.—p. 279.
Chancroidal Condyloma of the Vagina. Ravaut and Lambling.—p. 215.
"Occupational Melanoderma." A. Kissmeyer.—p. 224.
Benign Inguinal Lymphogranulomatosis. A. Kristjansen.—p. 227.
*Relations Between Syphilis and Cancer. V. C. Jonescu.—p. 231.

Pathogenesis of Lupus Erythematosus. — Schaumann's theory of lupus erythematosus is based on microscopic examination in three acute diffuse cases and eight chronic localized cases. He claims that the skin lesions are the reflection of a lymphogranulomatosis, which is a process of benign character. Under some still unknown influence it may exceptionally develop into a malignant, acute form. While the nonmalignant lymphogranulomatosis does not affect the general health and may subside, the acute form terminates in fatal septicemia. The granulomatous tissue is composed of epithelioid cells, besides the lymphoid and plasma cells. The lymphogranulomatosis of lupus erythematosus is closely analogous to tuberculous pseudoleukemia. The acute or malignant form may coexist with tuberculous lesions. Follicular tuberculosis may be the origin of the disease. The history of the patients frequently revealed tuberculosis. The outbreak of the granulomatous process induces, on the other hand, gradual retrogression of the tuberculous lesions, thus explaining their absence at necropsy. Erysipelas perstans of the face, as well as the skin manifestations of acute lupus erythematosus are probably induced by tuberculous toxins or by cell substances from the affected glands. Guinea-pigs inoculated with the gland tissue did not develop tuberculosis.

Relations Between Syphilis and Epithelioma.—Jonescu describes cases of cancer of the tongue, soft palate or vulva in three syphilitic persons. Since leukoplakia represents a horny papilloma, its degeneration into cancer, he says, may be easily explained. The interval between the syphilitic infection and the appearance of the cancer is long, but the course of the malignant process is rapid. Antisyphilitic treatment is of no avail; operation is the only indication.

7: 257-320 (May) 1926

Hemorrhagic Skin Syphilis. M. Favre.—p. 257.
*Ichthyol in Treatment of Furunculosis. A. Kissmeyer.—p. 297.
Tertiary Syphilis of the Face. D. Dupasquier.—p. 301.

Ichthyol in Treatment of Furunculosis.—Kissmeyer recommends ichthyol as a specific remedy for furunculosis. Each furuncle is first cleaned with alcohol or iodine and then covered with pure ichthyol. A thin layer of cotton is applied over the thick oil of the ichthyol, which soon dries, and the little dressing sticks like collodion. The next day the dressing is removed with tepid water, and the treatment repeated. If suppuration is profuse, the dressings are renewed twice a day. One or two applications induce considerable improvement. A nonperforated furuncle may disappear in a few days. Large furuncles should not be incised, but be treated simultaneously with the galvanocautery and ichthyol.

Archives de Médecine des Enfants, Paris

29: 249-312 (May) 1926

Postencephalitic Mental Perversions. G. Heuyer.—p. 249.
An Epidemic Eruptive Disease of Undetermined Nature. Stroë.—p. 255.
Case of Tay-Sachs Disease. C. Tretiakoff and A. Pujol, Jr.—p. 267.
Opsomyoclonic Syndrome with Encephalitis. W. Mikulowski.—p 279.
Poisoning with Cream Cakes. J. Comby.—p. 285.

29: 313-376 (June) 1926

Flocculation Test in Atrophic Conditions. Svehla and Saitz.—p. 313.
Primary Acute Orchitis in Children. E. Olry.—p. 329.
*Von Jaksch-Luzet's Anemia. R. Roelofs.—p. 341.

Pseudoleukemic Anemia Not Absolutely Fatal in Children.—Roelofs thinks, contrary to Beretervide and Bianchi, that the von Jaksch-Luzet anemia is not always fatal in infants. Certain constitutional anomalies, defective hygiene or alimentation, especially the prolonged use of goat's milk, also infections are the main causes of the disease. Of his seventeen typical cases and in forty-nine with a less complete clinical picture, goat's milk seemed to be responsible for the disease in three in the first group and in twelve of the others. There were no signs of syphilis or tuberculosis. There were two deaths in the first group and eight among the others. The pseudoleukemic anemia may be associated with rickets, the two being probably entailed by the same etiologic factors. Enlargement of the spleen and liver, hypertrophy of the glands, fever and gastro-intestinal disturbances may be among the symptoms of the anemia. The blood picture is characteristic. The treatment consisted in appropriate feeding, including vegetables and fruits, cod liver oil plus phosphorus, iron and ultraviolet rays. Arsenicals were not used. Seven cases of the pronounced type are described in detail to show the prompt recovery under these measures.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 915-954 (June 4) 1926

Gas Embolism. L. Binet.—p. 915.
Treatment of Syphilitic Anemia. C. Flandin.—p. 917.
A Hemoglobinometer That Records by Weight. E. Peyre.—p. 920.
Stramonium in Treatment of Parkinsonian Syndrome. Laignel-Lavastine and Valence.—p. 921.
Hypertension and Fibrous Nephritis. Renaud and Roland.—p. 924.
*Perforation in Artificial Pneumothorax. Tobé and Terrasse.—p. 928.
*Afebrile and Chronic Miliary Tuberculosis. E. Rist et al.—p. 934.
Tuberculin Reaction in Adults. A. Jousset.—p. 944.
*Tuberculosis in Syphilis. L. Laederich and R. Weil-Spire.—p. 949.
Diabetes with Tuberculosis. Sklodowsky and Konopnicki.—p. 952.

Perforation of the Lung in the Course of Artificial Pneumothorax.—Tobé and Terrasse report two cases of perforation of the lung occurring after the first insufflation for unilateral pneumothorax. Roentgenograms showed a fistula between the cortical part of the lung and the pleura. In one case the clinical picture resembled a spontaneous pneumothorax, in the other the perforation was not detected before the roentgen-ray examination. The lung perforation did not interfere with the results of the artificial pneumothorax. The fistula healed spontaneously in both cases as well as in four of Burnand's five. Asphyxia from perforation of the lung with induced bilateral pneumothorax may be averted by elective restriction of the first pneumothorax to a limited area. This leaves as large a field as possible for the normal functioning of the first collapsed lung.

Miliary Tuberculosis Without Fever or with a Chronic Course.—Rist, Rolland, Jacob and Hautefeuille describe one of their cases of acute miliary tuberculosis which developed within six months without fever or loss of weight. Although the clinical signs were insignificant, repeated roentgenograms indicated spreading of the morbid process, terminating in tuberculous meningitis. Histologic examination of the lung revealed association of tuberculous granulations with miliary tubercles. They report also two other cases of chronic miliary tuberculosis of the lung, with clinical recovery after one and two years. Roentgenologic examination apparently confirmed the disappearance of all anatomic changes.

Galloping Tuberculosis in the Course of Recent Syphilis.—Laederich and Weil-Spire refer to a case of acute tuberculosis in a young woman with syphilis acquired eight months before. The tuberculous lesions became highly destructive within four weeks terminating fatally in the sixth week. They have found only five instances on record of tuberculosis with such a rapid course in subjects with recent syphilitic infection.

Journal de Chirurgie, Paris

27: 385-528 (April) 1926

*Adenomyoma in Rectovaginal Space. L. Michon and H. Comte.—p. 385.

Adenomyoma of Rectovaginal Space.—Michon and Comte discuss the pathogenesis and describe the macroscopic and histologic lesions in fifteen cases of adenomyoma in the rectovaginal space, at Lyons. The first appreciable manifestation was induration in the posterior vaginal wall. This developed into a tumor, which at first occupied the space between the cervix, rectum and vagina; but later encroached on a part or even the whole of the small pelvis. Intolerable dysmenorrhea is one of the chief symptoms. It is associated with a sensation of heaviness in the rectum, anus or perineum, becoming exaggerated into severe pain at defecation. The atrocious "menstrual rectalgia" is pathognomonic; it is sometimes accompanied with vesical tenesmus. Another important symptom is profuse menorrhagia, from the hyperplasia of the

adjacent mucosa. Palpation through the rectum confirms the diagnosis. The small adenomyoma may be removed by way of the vagina or abdomen. A large tumor may require a total hysterectomy. Cullen's operation is preferable in case of rectal adhesions. They tabulate further the details of 101 other cases from the literature bringing the total to 116. They explain that the typical adenoma is a miniature uterus. The danger of recurrence discourages conservative intervention in the advanced cases. Radiotherapy failed in the one known case in which it was used.

Journal de Radiologie et d'Electrologie, Paris

10: 145-192 (April) 1926

Roentgen Rays of Different Wave Lengths. Dognon.—p. 145. C'en.—p. 210.
*Cancer of Uterine Cervix. H. Coutard and C. Regaud.—p. 152.
Choice of International Roentgen-Ray Unit. I. Solomon.—p. 155.
Gamma Radiation of Radium. M. Mazerès.—p. 159.
Radiologic Diagnosis of Gas Cysts. Bonnamour et al.—p. 164.
Calcified Cyst in Liver with Lung Cyst. Petzetakis and Yaloussis.—p. 169.
Radiography of the Ovary. Ducuing et al.—p. 172.
Apparatus for Radiography of Sinuses of the Face. Porcher.—p. 175.

10: 193-240 (May) 1926

Elasticity and Tone of the Stomach. A. Jaubert de Beaujeu.—p. 193.
Electric Resistance of the Skin. L. Neu.—p. 219.
Paralysis of Vocal Cord. M. Rabbinowitz.—p. 224.

Results and Technic of Roentgenotherapy for Cancer of the Uterine Cervix.—Coutard and Regaud report the results in two patients after hysterectomy and in twenty-nine inoperable cases. One of the women after the operation was exposed to the roentgen rays for glandular metastases in the pelvis. The recovery persists up to five years to date. In the inoperable patients, cancer of the cervix was accompanied with malignant infiltration of the parametrium, on one or both sides. In 28 per cent, the clinical recovery has persisted for from two to five years; the others were greatly improved. Among nine patients treated exclusively with roentgen rays, recovery was noted in 44.4 per cent. The roentgen rays, followed by radium treatment, induced recovery in 33.3 per cent of ten patients. None of the ten other patients were cured who had been treated with roentgen rays after the failure of radium. In order to avoid local reactions, the surface exposed was divided into several fields, each receiving a small dose of the rays. No general reactions were observed with this method. The total dose for a half of the pelvis was about 60 Holzknecht units, given in twenty-five days. No more than 4 or 5 units were given in a day. The total number of treatment hours was from twenty-five to fifty-five.

Presse Médicale, Paris

34: 753-768 (June 16) 1926

*Ultraviolet Rays in Tuberculosis. M. Villaret et al.—p. 753.
Intravenous Phenolsulphonphthalein Test of Kidney Function. M. Hélouin.—p. 755.
Radiology of Pleural Adhesions. A. Bernou.—p. 757.

Irradiated Oil in Local and General Treatment of Tuberculosis.—Villaret, Justin-Besançon and Fauvert mixed 6 Gm. of cholesterol with 1,000 Gm. of oil (artificially enriched and made unsaponifiable), and exposed the mixture to the ultraviolet rays for half an hour or an hour. The special properties acquired by the oil from this irradiation were retained for at least a year and a half. From 10 to 20 cc. of the irradiated oil was injected in pleurisy with effusion, then the effusion was aspirated, and up to 500 cc. of the oil injected. This indirect local actinotherapy seemed encouraging also in profuse effusions following induced pneumothorax, and in purulent tuberculous pleurisy. For general treatment of pulmonary tuberculosis, cholesterol, treated with ultraviolet rays from twenty minutes to two hours, was used alone. A teaspoonful was given by the mouth, once a day. This was combined with calcium salts. The treatment never induced fever, or any complications in the digestive tract. Improvement of appetite and increase in weight were the immediate results. Ingestion of the irradiated cholesterol was well tolerated by the tuberculous, even those with fever, while the contrary is observed under direct application of ultraviolet rays.

34: 769-784 (June 19) 1926

B. C. G. Vaccine in Prevention of Tuberculosis. G. Poix.—p. 769.
*Arsenicals in Treatment of Marasmus. Bodin and Chevrel.—p. 771.
Pseudobulbar Dementia from Syphilis. Foix and Chavany.—p. 772.

Treatment of Marasmus with Arsenicals.—Bodin and Chevrel treated eight infants with marasmus by subcutaneous injections of an arsenical preparation. The injections were given three or four days apart. Gain of weight with improvement of general condition was noted in seven infants. This usually occurred after one series of injections. The efficacy of the treatment may possibly be explained by the fact that congenital syphilis is a frequent factor in marasmus.

34: 785-800 (June 23) 1926

*Parapleg'a with Pott's Disease. Sorrel and Sorrel-Dejerine.—p. 785.
Chronic Inflammation of Colon and Cecum. Faroy and Baumann.—p. 789.
Transdiaphragmatic Hernia. P. Z. Rhéaume.—p. 791.

The Three Clinical and Anatomic Types of Paraplegia from Tuberculous Spondylitis.—Sorrel and Sorrel-Dejerine distinguish three forms of paraplegia from Pott's disease. Two forms are curable, one incurable. The curable paraplegia may be transient and disappear in a few weeks or months, or it may persist for one and a half or two years. The briefly transient form is of rare occurrence. The curable forms appear at an early stage of tuberculous spondylitis; the development of the paraplegia is rapid and complete. The clinical picture seems to be grave. Nevertheless, the paralysis disappears, without any sequelae. The incurable paraplegia is a tardy complication; it develops slowly; the sensibility and sphincters are not affected in the beginning. The curable forms are observed in adults as well as in children. They are induced by intraspinal abscesses, while the incurable form is due to external pachymeningitis. It is probable that the briefly transient form is caused by edema of the dura mater, not yet accompanied by abscess. Paradoxically, the prognosis is graver in paraplegia starting with a mild clinical picture than in that with severe manifestations.

Revue de Chirurgie, Paris

63: 63-118, 1926

Traumatic Pancreatic Fistula. R. Courboulès.—p. 63.
*Periarterial Sympathectomy in Bone Fractures. R. Fontaine.—p. 95.
Treatment of Old Dislocation of the Patella. P. Mallet-Guy and J. Rollet.—p. 105.

Periarterial Sympathectomy to Promote Healing of Fractures.—Fontaine applied periarterial sympathectomy to the brachial artery in two cases and to the femoral in six—all with defective consolidation of fractured bones. Complete healing with restoration of function occurred in about six weeks; in one not until the tenth month. The intervention failed in three cases with complicating suppuration or pseudarthrosis. The results were confirmed experimentally. Bilateral fracture of the metatarsus was produced in two dogs, and of the tibia in a third; then periarterial sympathectomy was made on one side. Consolidation occurred much more rapidly on the operated side. The active vasodilatation, entailed by the sympathectomy, evidently promotes the process of consolidation.

Pediatria, Naples

34: 569-624 (June 1) 1926

Biotypes in Pediatrics. S. Maggiore.—p. 569.
Epidemic Meningitis in Children. C. Gallo.—p. 578.
Sedimentation Test in Congenital Syphilis. C. Giaume.—p. 592.
Gangrenous Ecthyma. A. Versari.—p. 600.
Atonic Cerebral Paralysis. A. De Capite.—p. 609.

Anales de la Facultad de Medicina, Montevideo

10: 949-1024 (Dec.) 1925

Aspiration Treatment of Fistulas into Stomach and Duodenum. C. Nario.—p. 949.
Early Diagnosis of Congenital Syphilis. R. Berro.—p. 975.
*Cancer of the Lip. Carlos Butler.—p. 985.
*Lambliasis. J. Carrere.—p. 999.

Cancer of the Lip.—Butler analyzes 173 cases of cancer of the lip and eighteen of precancer conditions. In the 159 cases involving the lower lip, seventy-seven were smokers and fifty-one *maté* users. The total 191 cases included 8.8 per cent women; in 23.2 per cent the lesion was a postoperative recur-

rence. Under radium treatment, 60.3 per cent were clinically cured and only 10 per cent showed no improvement, in the lower lip cases, while 81.81 per cent were cured and 18.19 per cent improved in the upper lip cases. A special device for fastening the radium tube to the lip is illustrated.

Intestinal Lambliasis.—The two cases described by Carrere illustrate the wide diversity in the clinical pictures from these parasites. In one there were merely nausea, meteorism and constipation; in the other, pain after meals, vomiting, intestinal pains, diarrhea and melena. The parasite seemed to be restricted to the duodenum and below; the biliary apparatus showed no signs of it. Great improvement followed the use of an arsphenamine preparation.

Archivos Españoles de Pediatría, Madrid

10: 193-256 (April) 1926

International Standardization of Arrangements to Allow Breast Nursing During Factory Hours. E. Suñer Ordóñez.—p. 195.
Influence of Summer Heat on Infants. J. Bravo y Frías.—p. 199.
Prophylaxis of Infection in Infants. A. Romeo Lozano.—p. 209.
Prophylaxis of Tuberculosis in Children. J. García del Diestro.—p. 225.
*Chart for Child Welfare Work. C. Sainz de los Terreros.—p. 237.
Social Import of Fight Against Congenital Syphilis. Herrera.—p. 243.
The Fight Against Tuberculosis in School Age. R. Garelly.—p. 247.
Resolutions Adopted at Tenth International Child Welfare Congress, Madrid, 1926.—p. 252.

Records for Child Welfare Work.—Sainz de los Terreros expatiates on the advantages of using a standard chart for the record in individual cases, which would allow comparison of the data between different institutions and countries. He publishes a model chart for infants and young children in the home and in institutions. It has lines for thirty-four specifications as to the different biologic, pathologic and laboratory data, etc., from the child and the parents.

10: 257-320 (May) 1926

*Arsenical Polyneuritis in Children. L. Morquio.—p. 257.
Medical Inspection of Schools. G. Sáinz de los Terreros.—p. 287.
Atresia of Half of Nose. V. Juaristi.—p. 299.
Supracondylar Exostoses. V. Juaristi.—p. 301.

Arsenical Polyneuritis in Children.—Morquio relates that nine children in two families presented symptoms of poisoning from accidental contamination of the food at one meal with arsenic, or chronic poisoning from the water being kept in a barrel previously used for washing hides. The arsenical paralysis and pains affected the extremities alone, and were symmetrical. A characteristic false Kernig sign, the children being unable to sit up with the legs extended, suggested meningitis, but the cerebrospinal fluid was normal. In the water cases, the parents and an aunt were also affected, and the father died. Melanoderma was intense in the acute poisoning cases; gastro-intestinal symptoms had predominated at first. The children were all in the hospital eight or nine months, and all recovered apparently completely under iodide and electric treatment, massage and hot baths.

Archivos Latino-Amer. de Pediatría, Buenos Aires

20: 145-198 (March) 1926

Welfare Work for Infants. J. Damianovich.—p. 145.
*Congenital Laryngeal Stridor. M. Pacheco.—p. 157.
*Diagnostic Import of Craniotabes. S. E. Burghi.—p. 164.
Teaching of Hygiene to School Children in Argentina. Olivieri.—p. 182.

Congenital Laryngeal Stridor.—Pacheco states that malformation of the epiglottis was responsible for the loud crowing inspiration in the two young infants, aged 2 and nearly 5 months. Noted soon after birth and intermittent at first, it soon became continuous. There was no dyspnea or cyanosis and the Wassermann and tuberculin tests were negative. The stridor ceased during sleep in the girl infant and was much attenuated in the boy. The expiration sound was normal, and it is expected that the child will outgrow the anomaly in its second year, as in most of the similar congenital cases on record.

Diagnostic Significance of Craniotabes.—Burghi relates that the proportion of instances of craniotabes among 1,231 infants examined for it was 5.04 per cent. (Comby and others have found a much larger percentage, up to 35 or 46.6.) Of the sixty-two thus affected, fifty-eight presented various manifestations suggesting probable congenital syphilis, and only four seemed to be free from a syphilitic taint. Among thirty-six given the Wassermann test, it was positive in 8.36 per cent of the mothers, and 33.32 per cent of the infants. In thirty-two there was splenomegaly or coryza or both.

Boletin del Inst. de Clín. Quirúrgica, Buenos Aires

1: 253-285 (Dec.) 1925

*Subtotal Rhinoplasty. O. Ivanissevich.—p. 253.
*Stain for Nerves of Iris. M. Balado.—p. 257.
*Treatment of Infection of the Fingers. Arce and Squirru.—p. 262.
*The Botelho Reaction. S. Mazza.—p. 264.
*External Cancer. J. Arce et al.—p. 269.

Subtotal Reconstruction of the Nose.—Ivanissevich gives twenty-two serial illustrations of the results obtained with the Argentine method of rhinoplasty in a young man who had lost the lower part of the nose, down to the bone, from leishmaniasis. The pedunculated skin flap was taken from the forearm.

Stain for the Iris Nerves.—Balado describes a modification and combination of the Alfieri and Spillmeyer staining methods with which it is possible to stain the nerves in frozen sections of the iris in mammals. The sclera has to be removed.

"Lid" Resection for Cellulitis of the Fingers.—Arce and Squirru treat paronychia, especially with tendon-sheath involvement, by cutting away the soft parts over it, thus exposing it completely, down to sound tissue, to allow perfect drainage. The portions resected are oval, with bridges between as shown in an illustration. They call it the "lid" method, as the lid is taken off from over the process. The cellular tissue in the depths is resected even more generously than the skin. They irrigate with surgical solution of chlorinated soda every two hours after the resection, and when the dressings are changed have the whole hand placed in a hot much diluted solution of formaldehyde for ten or fifteen minutes. In twelve cases described, the patients were dismissed in from six to twelve days.

The Botelho Test.—Mazza applied this test to 153 serums; the reaction was positive in 60 per cent of the fifteen cancer cases, in 61.5 per cent of thirteen pregnant women, in 50 per cent of four echinococcosis cases, and in seven of fifty-five syphilitics. In twenty-one other noncancer cases the reaction was positive in twelve.

Rational Treatment of External Cancer.—Arce, Squirru and Nicolini relate that 100 of a series of 263 cancer patients were treated with radium, and that twenty-one of the fifty-nine skin cancers have been cured for four years to date, as also thirteen of the twenty-seven lip cancers, and one of the three mammary cancers. Thirty-two photographs accompany the article. Recurrence or aggravation was observed in twelve cases, and three of the patients have died since. In one of the sixty-five mammary cancer cases a complete cure was realized with electrocoagulation; three of the women have died of the fifty-four treated by mammectomy.

Boletin de la Soc. de Cirurgía de Chile, Santiago

4: 1-18 (April) 1926

*Transplantation of the Ovary. Hugo Grove.—p. 1.
Consolidation of Fracture Promoted by a Periarterial Sympathectomy. H. Grove.—p. 4.
Total Colectomy in Three Sittings. H. Grove.—p. 6.
Reconstruction of Biliary Ducts. J. Arnello.—p. 8.
Calculus in Common Bile Duct; Buried Drain. Id.—p. 10.
Case of Choreo-Epithelioma. A. Fuentealba.—p. 12.
*Treatment of Mercurial Poisoning. Recovery. Rudecindo de la Fuente.—p. 14.
Successful Förster Operation in Little's Disease. Johow.—p. 16.

Implanting the Ovary in the Uterus.—Grove has applied in several cases Tuffier's technic for transplanting the ovary. The indications for it were bilateral suppurating adnexitis rebellious to medical measures in three cases, bilateral pyosalpinx in two, and one case of left pyosalpinx with ruptured right tubal pregnancy. The ovary is implanted with its head inside the uterus, its cervix in the uterine wall. In the first three cases menstruation continued apparently undisturbed. The others are quite recent cases. His experience has demon-

strated that too much of the ovary must not be allowed to protrude, as otherwise it may act like a polyp; on the other hand, it must protrude far enough for the ovum to fall into the cavity of the uterus. In three of his cases he had to prepare the ovary by evacuating a cyst or abscess. Preliminary dilation of the uterine cervix is not necessary as it can be dilated during the operation.

Blocking the Splanchnic Nerves in Treatment of Anuria from Mercurial Poisoning.—The young woman had had anuria for two days and was delirious. The relief from bilateral injection of procaine to block the splanchnic nerves was prompt; the pains were relieved, the delirium subsided, and in two hours 50 Gm. of fetid urine was voided, and up to 400 Gm. by the second day with recovery. The oxycyanide was the mercurial salt involved.

Boletin de la Soc. de Obstet. y Ginec., Buenos Aires

5: 25-62 (May 18) 1926

"Embryotomy with Living Fetus." Zarate.—p. 37.
Pregnancy Pernicious Anemia. R. Bustos Morón.—p. 42.
*Vagina Made from Intestine. J. Iribarne and Contreras Ortiz.—p. 51.

Vagina Made from Loop of Intestine.—Iribarne and Contreras Ortiz report the successful application of the Baldwin-Mori technic in a case of aplasia of uterus and vagina in a young married woman. The left (rudimentary) tube and apparently normal left ovary were the only representatives of the sex organs. They applied the Baldwin-Mori technic with complete success, and state that this is the seventy-eighth operation for construction of a vagina on record. It brings the death rate down from 11.4 to 11.2 per cent. The technic and results are illustrated, with three colored plates.

Brazil-Medico, Rio de Janeiro

1: 201-212 (April 10) 1926

Treatment of Leishmaniasis of Mucous Membranes. J. de Aguiar Pupo.—p. 201.
Vaccine Treatment in Case of Iritis. E. Campos.—p. 204.

1: 227-238 (April 24) 1926

*Acute Generalized Peritonitis. Americo Valerio.—p. 227.
Case of Silent Iritis. E. Campos.—p. 230.

Treatment of Acute Diffuse Peritonitis.—Valerio operates at once; an occasional unnecessary laparotomy is much better than to let even one case get beyond control. The old death rate of 80 to 95 per cent has been transformed in the last fifteen years to recovery in 80 to 90 per cent. The main thing is to discover and remove the cause, irrigating and draining the peritoneum. He warns against draining in gastro-intestinal operations as this is liable to entail interminable fistulas. In appendicitis and adnexitis, he drains the pouch of Douglas as a routine measure. Fowler's position should be enforced in every case of peritonitis. An abundant supply of a solution of saccharose or glucose should be provided, avoiding physiologic sodium chloride solution, as this blocks the kidneys. Camphorated oil is also useful, 10 cc. daily, given cautiously. Autohemotherapy and antitetanus serum should also be considered. In case of postoperative dilatation of the stomach, the stomach should be rinsed out, never using more than 200 or 300 cc. for the purpose.

Prensa Médica Argentina, Buenos Aires

13: 1053-1088 (April 10) 1926

The Arterial Circulation in the Impulse-Conducting Apparatus in the Heart. E. Géraudel.—p. 1053.
Krukenberg Tumors. A. G. Neumann.—p. 1067.
*Syphilis of the Circulatory Apparatus. J. L. Carrera.—p. 1069.
The Social Function of the University. L. La Porta.—p. 1073.

Syphilis of the Heart and Vessels.—Carrera has dropped mercury completely in treatment of syphilitic disease of the circulatory apparatus, as it is liable to block the kidneys. He graduates the doses of neo-arsphenamine according to the tolerance, beginning with 0.05 Gm., repeating in three days. In angina pectoris he does not go above 0.3 Gm. twice a week, and with aneurysm of the aorta, he gives 0.15 Gm. three times a week. He thus reaches a total of 6, 8 or 10 Gm. in a series, and then suspends it for twenty to twenty-five days, possibly alternating with iodide. In twenty-five cases of myocarditis, the improvement was notable. The only danger is that the series may be interrupted before enough of the drug has been given. In one patient with aortitis and weak heart, decompensation improved under treatment for a year with neo-arsphenamine (total, 20 Gm. during the year). He then abandoned treatment, but returned a year later with symptoms suggesting recurrence of the previous condition, and died suddenly three days later. In three of Carrera's ninety cases of aortitis there were symptoms of angina pectoris, which subsided entirely, and all were materially improved. Bismuth treatment, exclusively, failed completely. He supplements the specific treatment with restriction of salt in the diet, theobromine or other diuretics, and nitroglycerin or benzyl benzoate as indicated. He has given iodide by the vein in hundreds of cases with good results.

13: 1145-1172 (May 10) 1926

*The Hilum Dance. M. Miranda Gallino.—p. 1145.
*Berberin with Quinine in Malaria. C. P. Waldorp.—p. 1147.
Pregnancy Pernicious Anemia. R. Bustos Morón.—p. 1148.
*Postarsphenamine Eruption and Stomatitis. J. L. Carrera.—p. 1162.
Toxicity of Tumor Extracts in Relation to Protein Content. A. H. Roffo and R. López Ramírez.—p. 1164.

The Hilum Dance.—Miranda Gallino quotes this term to express the expansive pulsation in the hilum of the lungs during the systole of the ventricle, the shadow growing small again during the diastole. It does not seem to be pathognomonic of any special pathologic condition as it has been observed with various forms of heart disease. It is a sign of permanent hypertension in the lesser circulation. It was pronounced in a man with sclerosis and ectasia of the pulmonary artery and generalized arteriosclerosis, but no other circulatory derangement.

Treatment of Chronic Malaria.—Waldorp reports excellent results in a number of cases of chronic malaria in which berberin was associated with the quinine. He gave adults up to eight or ten 0.20 Gm. tablets of berberin sulphate daily. This brings on attacks of the malaria, transforming a simple tertian or quartan form into a double or triple form. Then, in the midst of an attack, he makes an intramuscular injection of 0.25 Gm. of quinidine sulphate in solution, repeating this daily for ten days, or giving 0.30 Gm. tablets of quinidine twice a day. By this combined treatment he has succeeded in curing apparently stubborn cases.

Rash and Stomatitis from Arsphenamine.—Carrera reports that a young woman, aged 18, with a three plus Wassermann reaction and signs of congenital syphilis, had been given mild mercurial treatment a year before. As severe headaches persisted, he gave a course of neo-arsphenamine, beginning cautiously, reaching a total of 4.5 Gm. Then a severe eruption developed, accompanied by intense stomatitis and gingivitis, enormous edema of the tongue and inside of the cheeks, and ulcerations. A laryngologist consulted assumed that the lesions were due to syphilis, and began treatment with arsphenamine. If this had been continued, serious results might have been entailed. Under internal treatment with epinephrine and local application of hydrogen peroxide creams, the morbid conditions slowly subsided by the end of the second month.

Revista de Cirugía, Buenos Aires

5: 97-144 (March) 1926

Flail Joints and Snapping Joints. R. Lozano.—p. 97.
Surgical Anatomy of and Above the Groin. Avelino Gutiérrez.—p. 111.
Blood Cysts in the Liver. P. Jáuregui and Etchegorry.—p. 127.
*Anomalies in Cervical Sympathetic. A. Pavlowsky.—p. 139.

Anatomic Anomalies in the Sympathetic Nerve in the Neck and Thorax.—Pavlowsky gives twenty-five illustrations of the anomalies found in dissection of fifty cadavers on which the Jonnesco operation of cervical sympathectomy was being studied. In one case the pneumogastric was blended with the left superior cervical ganglion, and could not be separated from it, the nerve fibers being actually crossed. The ganglion was no larger than normal, and the pneumogastric above and below seemed normal. In another case the inferior cervical ganglion forked to encircle the vertebral artery as in a ring. The superior thoracic ganglion was often adherent to the pleura.

Revista Médica Latino-Americana, Buenos Aires

11: 963-1104 (March) 1926

*The Functions of the Spleen. F. L. Soler.—p. 963.
Bilateral Purulent Pleurisy with Phlegmon in Thigh. Donovan.—p. 986.
Liver Disturbances with Asthenic Ptosis. Barilari and Cifone.—p. 990.
The Electric Discharge in the Air. J. C. Landaburu.—p. 993.
*Function Tests of the Kidney. J. J. Gazzolo.—p. 1006.
Industrial Accidents and Occupational Diseases. L. Bard.—p. 1024.

The Functions of the Spleen.—Soler recalls that as substances in the body have to be dissolved before they can be utilized, the formed elements of the blood that have outlived their usefulness or are defective from any cause have to be brought together at some point where they can be acted on by ferments or other agents to prepare them to be dissolved. The spleen is the organ where they are thus accumulated. It retains them for a time, giving the ferments a chance to act on them en masse. Then the spleen contracts, and this expels them, but by this time they are ready for speedy disintegration, and this is accomplished in the liver. Like the stomach, the spleen gives the formed elements of its contents a chance to accumulate and be vigorously acted on, and then passes them along. When the intrasplenic digestion is unable to proceed normally, the blood corpuscles and bacteria pile up in the spleen and it is unable to expel them properly (malaria), or else the spleen passes them on too soon (septicemia). For this function of accumulating, digesting and expelling the unfit corpuscles, he has coined the term sisoresis, and presents evidence to show that this main function of the spleen is highly selective, and not mere filtration.

Tests of Kidney Function.—Gazzolo emphasizes the importance of applying several tests and not relying on study of the urine or on any one test alone. The Ambard coefficient generally harmonizes with the results of the phenolsulphonphthalein test. Spurr advocates leaving the two ureter catheters in place for two hours for the diuresis test (drinking 600 cc. of water or mild diuretic tea, fasting). The defectively functioning kidney will not excrete as much urine as its mate. He injects a stain for a further test, and insists on the necessity for determining any abnormal proportion of chloride or nitrogen in the blood. Pagliere prefers to inject the indigo carmine intramuscularly for chromocystoscopy.

Revista de Medicina y Cirugía, Havana

31: 175-218 (March 25) 1926

Successful Subcutaneous Symphysiotomy with Breech Presentation. S. Garcia Marruz.—p. 175.
*Intrahepatic Lithiasis. Elpidio Stincer.—p. 190.
Vital Statistics of Havana in 1925. Jorge Le-Roy y Casaá.—p. 193.

Calculi in the Liver.—Elpidio Stincer describes the case of a woman who for four months had been having gastric disturbances, accompanied after a time with acute pain in the right hypochondrium and finally rigors and fever with sweating crises. The liver was very large, tender, and adherent to the abdominal wall. A deep incision released a large amount of pus and innumerable calculi while the gallbladder and biliary ducts showed no signs of cholelithiasis. It was exclusively intrahepatic, and there had been no jaundice. The woman succumbed two weeks later to heart failure. The roentgenograms had shown merely the enlargement of the liver, with no signs of the calculi.

31: 219-250 (April 10) 1926

Campaign Against Typhoid at Matanzas in 1926. Chalons.—p. 219.
*Avitaminosis in Tadpoles. W. H. Hoffmann.—p. 237.

Avitaminosis in Frogs.—Hoffmann relates that the tadpoles of *Hyla septentrionalis* fed exclusively with bread developed a disease resembling beriberi, and died before the stage of metamorphosis was reached. This experience was repeated in eight or ten sets of fifty specimens. In the latest group all had died but five, when he altered the conditions for them, providing them with fresh water every two or three hours, and not allowing any bread during the night. These five tadpoles lost all the acute symptoms of beriberi, and grew to be four or five times the normal size, and the tadpole phase persisted for 115 to 198 days, instead of the normal fifteen or sixteen days. They then died, probably from some unintentional neglect. These tadpoles did not rise to the surface to breathe for an hour or two after the arrival of the fresh water. The enormous surface area of the tail allowed ample respiration through the skin. Hundreds of tadpoles have died under his observation when the water was not changed often enough. Rotting substances probably exhaust the oxygen in the water. When the tail is cast, the animal has to breathe through its lungs, and it comes out of the water. He suggests that the tadpole tail may be found useful in study of respiration through the skin. The experimental lengthening of the larval stage suggests that science may prolong human life in this way.

Revista Soc. Arg. de Nipiol. y Pediat., Buenos Aires

1: 145-324 (Nov.) 1925. Centeno Memorial Number

*Liver Abscess in Children. J. C. Navarro.—p. 153.
Which Children Profit by Open-Air Schools. Garrahan.—p. 158.
*Suppuration in Iliac Glands in Children. C. Lugones.—p. 170.
Experiences with Immediate Separation of the New-Born from Tuberculous Mother. De Elizalde.—p. 175.
Neuropsychic Development and the Endocrines. J. Busco.—p. 183.
*Patent Botallo's Duct. De Elizalde and Beretervide.—p. 199.
Multiple Diphtheric Paralysis. S. Madrid Páez.—p. 213.
Scurvy in Children. Mamerto Acuña.—p. 219.
Infectious Diseases in Foundlings' Asylum. Naveiro.—p. 241.
*Treatment of Diphtheric Paralysis. Larguia and Del Carril.—p. 250.
Erythema Nodosum and Tuberculosis. G. Aráoz Alfaro.—p. 272.
Recklinghausen's Disease. J. Llambias.—p. 292.
Home Medical Inspection of Infants of Wetnurses. J. Paz.—p. 296.
*Anthrax in New-Born Infant. C. Ginepro.—p. 300.
Treatment of Birth Separation of the Epiphysis of the Humerus. J. M. Jorge.—p. 304.
*Diagnostic Import of Hemiplegia in Extension. J. M. Obarrio.—p. 311.

Abscess in the Liver in Children.—This is the fifth case of this kind that has been published by Navarro. In the others the abscess was traced to colitis, amebiasis or furunculosis, but in this case the boy, aged 12, had acute necrotic appendicitis with a purpuric syndrome. Necropsy revealed that the appendix had not perforated.

Suppuration in Iliac Lymphatic Glands in Children.—Lugones has recently encountered suppurating adenitis in the iliac region in three children, aged 9 months, 3 and 12 years. The insidious and torpid onset and course had suggested sarcoma of the pelvis. Puncture evacuated 147, 200 and 300 Gm. of thick, nonodorous pus, and after draining for five to twelve days the recovery was complete. One of the children required appendectomy four months later, but the peritoneum seemed to be intact, with no signs of preceding infection although the middle iliac gland was larger and harder than normal as a result of its former suppuration.

Persistence of Ductus Arteriosus.—In an infant, aged 14 months, as pneumonia subsided, the symptoms indicated that Botallo's duct was patent. The clinical study of the case is compared with the conditions found at necropsy, especially the dilatation of the ascending aorta.

Postdiphtheric Paralysis.—Under large doses of antitoxin, the paralysis in and following diphtheria yielded in the fourteen cases described. Some required up to eleven injections, the amounts ranging from 4,500 to 10,000 units. In a few the paralysis subsided in three or four days, under the 10,000 unit doses. The paralysis of the velum is a good criterion of the state of the paralysis. When fluids in the mouth cease to run out of the nose, the paralysis may be regarded as practically conquered. Two of the children succumbed to myocarditis after the paralysis had subsided.

Anthrax in New-Born Infant.—The anthrax bacillus was found in the heart blood of an infant a week after birth and six days after the death of the mother from anthrax. The infant had not presented any special symptoms.

Hemiplegia as Sign of Intracranial Hypertension.—Obarrio found distension of the lateral ventricle from circumscribed hydrocephalus as the cause of hemiplegia in extension in two young children. Obstruction of the foramen of Monro readily explains the hemiplegia. In one child, the hemiplegia subsided the moment the lateral ventricle was opened. In the second child, the diagnosis was confirmed by necropsy.

Santa Fé Médico

1: 227-287 (April) 1926

*Carbohydrate Metabolism in Suprarenal Insufficiency. Pico Estrada. —p. 227.
Tuberculoma of Cerebral Peduncle. Luque and Ferraris.—p. 234.
Untoward By-Effects with Arsenicals. E. Fidanza.—p. 241.
The First Census of Infants. P. Rueda.—p. 261.
Inoculation Tests in Diagnosis of Pulmonary Tuberculosis. R. Barralt. —p. 266.

Carbohydrate Metabolism in Suprarenal Insufficiency.—The experiments reported by Estrada seem to demonstrate an antagonistic action of the different parts of the suprarenals in respect to carbohydrate metabolism. The cortex favors the formation of glycogen at the expense of glucose, while the other parts of the gland, and their active substance, epinephrine, favor the transformation of glycogen into glucose. It is possible that the active substance of the cortex normally accumulates in the tissues. This would explain the curious lack at first of any symptoms in experimental suprarenal insufficiency except the hypoglycemia, and then the rapidly fatal decline.

Semana Médica, Buenos Aires

1: 429-480 (March 4) 1926

*Comparison of Sarcoma in Man and Fowls. Brachetto Brian.—p. 429.
Trajectory of Nail Piercing Child's Chest. Larguia and Vergnolle.—p. 432.
*Intestinal Invagination in Infants. M. Steinsleger.—p. 435.
*Convalescents' Serum in Scarlet Fever. Cucullu and Grosso.—p. 441.
Heart Disease and Pregnancy. Daniel A. Rojas.—p. 446.
The Rosario Infant Asylum. P. Rueda.—p. 452.
Tuberculosis and Sanocrysin. J. Dutrey.—p. 456.
Teaching of Mothercraft in Normal Schools. D. E. Caravias.—p. 477.

Myxosarcoma in Man and the Peyton-Rous Chicken Sarcoma.—Brachetto Brian's testimony as to the close resemblance between these two sarcomas was summarized in these columns, Nov. 14, 1925, p. 1593. He thinks that the few points of difference can be traced to the soil.

Intestinal Invagination in Infants.—Steinsleger reports twelve recoveries among the twenty infants, aged from 1½ to 17 months, given operative treatment by Maidagan; all recovered in his own eleven cases. The outcome depends on early diagnosis and immediate surgical correction of the invagination. One child recovered although the invagination was of forty-eight hours' standing. Both ileum and cecum were involved in the majority, but in one the ileum alone. In this case there was no bleeding and the tumor was barely perceptible, but the signs of obstruction compelled immediate intervention and the child was saved. The exceptional movability of the cecum in young infants explains the predisposition to invagination at this age.

Convalescents' Serum in Scarlet Fever.—Cucullu and Grosso declare that the Schultz-Charlton extinction test is useful not only in diagnosis but has a decided curative action besides. They give an intradermal injection of 1 cc. of convalescents' serum to each scarlet fever patient admitted to the ward. The blanching reaction was obtained in 94 per cent of those at the second day of the disease, the responses growing less as the disease progressed, to 33 per cent the fifth day and zero the sixth. They repeated it as a therapeutic measure at one or more days' intervals, injecting 1 or 2 cc. of convalescent serum. The effect was unmistakable on the decline of the eruption and the fever. A single injection arrested the otorrhea, and if it flared up a few days later, another injection completed the cure. They tabulate the details of eighty cases; in the eighteen with otorrhea, 39 per cent were thus cured; the others improved but the course was not completed owing to intercurrent disease or the family taking the child away.

1: 689-740 (April 8) 1926

*Pneumothorax Treatment in Pregnancy. M. L. Pérez et al.—p. 689.
Transfusion in Obstetric Practice. A. Guiroy.—p. 698.
Bibliography on Ossification of the Eye. P. Satanowsky.—p. 706.
*Labyrinth Reflex with Brain Tumors. P. L. Errecart.—p. 707.
Prostheses for Perforated and Cleft Palate. R. A. Crespi.—p. 710.
Influence of Drying Temperature on Drugs. L. de Prado.—p. 724.
Plasmogenesis in 1925. A. L. Herrera.—p. 729.

Induced Pneumothorax in the Pregnant Tuberculous.—The case reported by Pérez, Mascheroni and Tourreilles in a young primipara demonstrates the lasting improvement under collapse therapy even during the stress of childbearing. The tuberculous process involved the right lung and both apices. Nitrogen was injected sixteen times during the six months before delivery. The pneumothorax has been continued during the seven months since, and the condition is still persistently good.

Labyrinth Reflex with Brain Tumors.—Errecart calls attention to the exaggeration of the contralateral labyrinth reflex in cases of cerebellopontine tumors.

Siglo Médico, Madrid

77: 385-412 (May 1) 1926

*Epididymectomy in Genital Tuberculosis. Bastos.—p. 385.
Auditory and Visual Hallucinations of Cortical Origin. G. R. Lafora. —p. 390.
Bone Diseases in Prehistoric Times. V. Delfino.—p. 391.

Epididymectomy in Genital Tuberculosis.—Bastos remarks that in four of the ten cases in which he removed the epididymis the tuberculous process was bilateral from the first. Only in two was it strictly limited to the epididymis, and in all the lesion was evidently secondary to a tuberculous process elsewhere. All were improved or cured of their genital process, and there has been no recurrence on the other side in any instance, although a fistula long persisted in four cases and one required castration. The interval since has been from one to four years.

77: 465-484 (May 22) 1926

*Diagnosis of Morphine Addiction. C. Juarros.—p. 465.
Clinical Reminiscences of a Country Doctor. P. Luengo.—p. 467. C'tn.
Histology of the Pineal Gland. P. Ruiz Santolaya.—p. 470.

Morphine Addiction.—In the course of this study of morphine addiction, Juarros says that the sedimentation test and the Hecht reaction are the simplest and most convenient means for ascertaining whether the patient being treated is obtaining morphine or not. The sedimentation of erythrocytes is accelerated in proportion to the amount of morphine in the body. Hecht insists on the reliability of the response when intradermal injection of 0.005 Gm. of morphine induces a wheal, like those of urticaria. It appears in a few seconds and disappears in an hour or two. This is the only sign which testifies that the patient is getting morphine.

Archiv für Gynäkologie, Berlin

128: 391-628 (May 15) 1926

Birth Mechanism with Contracted Pelvis. P. Schumacher.—p. 391.
*Inflammatory Origin of Tubal Atresia. I. Kitai.—p. 413.
Annular Placenta. L. Fraenkel and J. Granzow.—p. 442.
Uterine Sarcoma of "Rhythmic" Structure. W. Geisler.—p. 452.
*Renal Function and Pregnancy. R. Kräuter.—p. 467.
Folliculoma of the Ovary. A. Blau.—p. 506.
*Wassermann Test at Parturition. H. Boas et al.—pp. 527 and 537.
*Functional Disturbances of Puberty Period. A. v. Fekete.—p. 540.
*Pregnancy and Pulmonary Tuberculosis. F. Schultze-Rhonhof.—p. 563.
Ovarian Hematomas and Endometrioid Formations. R. Cordua.—p. 617.

The Inflammatory Origin of Atresia and of Heterotopic Epithelial Proliferation in the Tubes.—Kitai believes that atresia and heterotopic proliferation of the mucous membrane of the fallopian tube are nearly always the result of inflammation, and are not congenital malformations. He presents microscopic studies of seven cases.

Renal Function and Pregnancy.—Kräuter studied the regulating power of the kidney on the acid-base equilibrium of the blood in pregnancy, as reflected in the urine. Curves are presented showing the variations in the hydrogen ion concentration of the urine during the day, in different stages of pregnancy, and in eclampsia and with various diets. The variations during the day, while present, are less than in nonpregnant healthy women. Hydrochloric acid given by mouth had little or no influence on the p_H of the urine, and bicarbonate of soda injected intravenously failed to raise the alkalinity of the urine to the height normally to be expected. These facts point to functional deficiency of the kidney in pregnancy. Disturbances at the beginning of pregnancy have little effect on the p_H curves following administration of an excess of acid or alkali. In slight disturbances in the later months, the reaction remains neutral or, on administration of alkali, becomes alkaline. In severe cases of renal disease

and in eclampsia, the reaction is strongly acid, and the curve is unaffected, even when an excess of alkali is given.

The Behavior of the Wassermann Reaction at Parturition.—Boas and Gammeltoft found that retroplacental blood gave nonspecific reactions to serodiagnostic tests in forty-three out of 273 cases. In collaboration with Sieck, on a material of 2,200 patients, they found that the venous blood of pregnant, parturient and puerperal women gave as reliable reactions as that of other persons. Their technic made use of two antigens, an alcoholic extract of the human heart and a syphilitic liver extract.

Functional Disturbances of Puberty.—Fekete studied nineteen cases of uterine hemorrhage in young girls. In a large proportion of the patients there was objective evidence of lowered ovarian function. The hemorrhages may be considered as representing defective cooperation between various systems of the organism. The endometrium has reacted promptly and satisfactorily to the ovarian hormone, but the reactive power of the contractile elements of the uterus are still underdeveloped. The direct causes of long continued bleedings are dysharmony between the mucous membrane and undeveloped musculature, the instability of the vasomotor system and possibly an abnormal composition of the blood. The influence of the ovaries is an indirect one. Neither chlorosis nor thrombopenia was found in any case. Functional disturbance of the thyroid and of the sympathetic nervous system was frequently present. Intravenous injections of calcium gave good results in some cases of stubborn bleeding. Irradiation of the spleen cured one patient permanently, but failed in another. Constitutional treatment with endocrine remedies, exercise, air baths, etc., is in place when the hemorrhage has been checked. Sixteen of his nineteen patients were cured by these measures; in two, curettage had to be performed. The cause of constitutional leukorrhea is the heightened irritability of the vaginal mucous membrane and the secretory apparatus. The reasons for this irritability are to be found in weakness, anomalies of the endocrine system and, chiefly, in an excited condition of the nervous system. Genital hypoplasia was often found. Calcium was beneficial in some cases, but a permanent cure is frequently not obtained during the period of puberty.

Pregnancy and Pulmonary Tuberculosis.—Schultze-Rhonhof reviews and discusses the literature on the effect of pregnancy on the tuberculous patient. He believes that our present knowledge does not justify interruption of pregnancy in the tuberculous as a routine measure, and outlines a plan to obtain statistics which would throw a clearer light on the question of interruption of pregnancy versus conservative treatment.

Deutsche medizinische Wochenschrift, Berlin

52: 943-984 (June 4) 1926

The Optic Nerve in Tabes. J. Igersheimer.—p. 943.
*Immunization by Mouth. H. Reiter.—p. 946.
Divided Work in Labor. H. Sellheim.—p. 949. C'en.
Feeding with Human Milk. P. Grosser.—p. 951.
Size of the Heart. A. Juda.—p. 956.
Pure Insulin. F. Laquer.—p. 957.
*Fashions Causing Skin Diseases. J. Oestreicher.—p. 958.
*Differentiation of Urine Sugars. Klein and Soliterman.—p. 959.
Neuralgias in Gynecology. A. Landeker.—p. 960.
Diet. A. v. Soós.—p. 961.
Treatment of Cardiospasm. D. Rosenberg.—p. 962.
Physiology and Pathology of the Spleen. H. Rautmann.—p. 964.
Statistics of Venereal Diseases. H. Haustein.—p. 967.
Occupational Skin Diseases. Beintker.—p. 968.
Reform of Dentistry. Walkhoff.—p. 970.

Immunization by the Mouth.—Reiter used in animals a 5-10 per cent solution of sodium benzoate, given one to three hours before administration of vaccines by the mouth, and obtained fair results.

Fashions Causing Skin Diseases.—Oestreicher observed eczema of the neck in women who pull their dyed hats low. Underwear made from artificial silk or wool cannot be boiled without spoiling, and it frequently causes dermatoses. New stockings may injure the skin if their dye gets into an erosion. Rubber sponges should be discarded, since they cannot be boiled and thus may transmit infection.

Bacteriologic Differentiation of Urine Sugars.—Klein and Soliterman add pure cultures of the colon bacillus to the neutralized urine after addition of litmus tincture. Dextrose is indicated by development of a pink color after leaving the mixture for half an hour to an hour in the incubator. Lactose requires two or three hours for the color reaction.

52: 985-1026 (June 11) 1926

Nystagmus in Schizophrenia. M. Rosenfeld.—p. 985.
Leukocyte Counts. V. Schilling.—p. 988. C'td.
Decapsulation of the Kidney. K. Fischer.—p. 992.
*False Melena. U. Franke.—p. 993.
The Measuring of Goiters. E. Maurer.—p. 994.
*Treatment of Inflammations. W. Barfurth.—p. 996.
Cholecystography. K. Herman.—p. 997.
*Poisoning by Shoe Dyes. H. Ullmann.—p. 998.
*Form of Skull and Posture of Infants. A. Basler.—p. 1001.
Diseases of the Bladder. Fürbringer.—p. 1002.
By-Effects of Rays. H. Holfelder.—p. 1005.
Intravenous Dextrose Treatment. H. H. Hess.—p. 1007.
Acute Myeloblastic Leukemia. H. Curschmann.—p. 1009.
Nonauthorized Balneotherapy. H. Rosin.—p. 1010.

Melena Spuria.—Franke observed in two new-born infants melena which was due to the swallowing of blood lost by the mother during delivery.

Treatment of Inflammations.—Barfurth injects 0.1-0.3 cc. of the patient's own pus intracutaneously. He used this treatment in gonorrhea, furunculosis, mastitis, whooping cough, coryza and even tuberculosis, without observing any local infection.

Poisoning by Shoe Dyes.—Ullmann reports a few cases of poisoning by aniline contained in dyes used for dyeing shoes black. Children are especially liable to be injured by wearing such freshly dyed shoes. Restlessness, apathy, cyanosis and fever are common symptoms.

Form of Skull and Posture of Infants.—Basler recalls Walcher and Elsässer's experiment made twenty years ago. They produced at will in a large percentage of 555 infants, dolichocephaly by giving them a hard pad under the head, and brachycephaly by letting the head lie on a soft pillow. Basler tried to ascertain the later fate of these children. He regrets that he could find only five for examination. It seems that the experiment definitely changed the shape of the skull in four of them.

Deutsche Zeitschrift für Chirurgie, Leipzig

195: 353-426 (May) 1926

*Pathologic Physiology of General Anesthesia. I. Wymer.—p. 353.

An Experimental Study of General Anesthesia and Its Pathologic Physiology.—In the first section of this article, Wymer deals with general anesthesia from the standpoint of the acid-base equilibrium. Ether and chloroform are taken up separately and their effects studied in the rabbit, the dog and the human subject. He distinguishes two phases in the effects of ether anesthesia, the acidotic change during the first twenty-four hours, and the alkalotic change after that period. The acidosis of the first phase never reached a dangerous height, and even exerted a favorable influence by stimulating the respiratory center to a more rapid elimination of the anesthetic. The alkalotic phase, by favoring hypoventilation, may play a rôle in the development of postoperative pneumonia. Chloroform produces a more lasting disturbance of acid-base equilibrium; acidotic changes only are seen. In the second part, Wymer studies in rabbits the effects of shock, of loss of blood and of hunger and food on the acid-base economy, and in the human subject the effects on the same of various diets after operation under general anesthesia.

Klinische Wochenschrift, Berlin

5: 1017-1064 (June 4) 1926

Diabetes Insipidus. J. Bauer.—p. 1017.
*Skin Tests with Dandruff. W. Storm van Leeuwen et al.—p. 1023.
*Insulin Shock. E. F. Müller and W. F. Petersen.—p. 1025.
*The Blood Pressure and the Capillaries. L. Lenaz.—p. 1028.
Double Action of Vegetative Poisons. E. Baráth.—p. 1032.
*Lumbar Puncture in Out-Patients. G. Rahlwes and J. Loewenstein.—p. 1034.
"Beginning Tuberculosis." Fraenkel.—p. 1037. Reply. Jessen.—p. 1038.
Estrual Hormone in the Urine. S. Loewe and F. Lange.—p. 1038.
Tests of the Reticulo-Endothelial System. Memmesheimer.—p. 1039.

Diagnosis of Amyloidosis. L. Németh.—p. 1040.
Aneurysms in Endocarditis. R. Stern.—p. 1041.
So-Called Catarrhal Jaundice. G. Lepehne.—p. 1042.
Paracelsus. G. Sticker.—p. 1045. C'en.
Congress on Psychotherapy. E. Schmidt.—p. 1062.

Skin Tests with Dandruff.—Storm van Leeuwen, Bien and Varekamp describe the preparation and standardization of an extract from human dandruff. They obtained with it positive skin reactions in patients with allergic diseases, especially asthma. Some of the extracts are nonspecific, but may be cleaned by ultrafiltration. They believe that the dust and various micro-organisms contained in the rooms are present in the dandruff, and account for its action.

Insulin Shock.—Müller and Petersen conclude that the insulin shock is due to an acute disturbance in the vegetative nervous system. It consists in a predominance of the sympathetic in the tonus of the blood vessels of the splanchnic region, and predominance of the parasympathetic at the periphery. All the phenomena of the shock except the convulsions—which, however, are not an essential part of the shock—may be explained by this mechanism. The reaction begins probably in the splanchnic system and is caused by the disappearance of glycogen from the liver—not by the hypoglycemia. The insulin shock is the perfect opposite of the peptone shock.

The Blood Pressure and the Capillaries.—Lenaz regards the normal water content of the blood as a function of the equilibrium between the colloidal pressure of the blood plasma and the hydrodynamic pressure in the capillaries. As long as both these factors are unchanged, the water content of the blood (expressed by the number of erythrocytes per cubic millimeter) remains constant. If the capillary pressure sinks, or if the colloidal pressure of the plasma increases, the blood keeps or attracts more water from the tissues. With a rise in the capillary pressure, the blood becomes thicker. Changes of arterial pressure alone—without changes in the capillaries—do not affect the water content of the blood. Epinephrine influences both. An injection is followed not only by an increased blood pressure but also by a proportionately decreased hydremia. The ratio between the blood pressure (in millimeters of mercury) and the erythrocyte count (in millions per cubic millimeter) remains the same—about 25-26 during the whole reaction. The capillary pressure is low with insufficiency of the heart; hence the hydremia. Polycythemia occurs here only with concomitant changes in the lungs. The hypo-epinephrinemia of Addison's disease has a normal blood pressure-blood count quotient. Pure nephritis with mere contraction of the arteries has hydremia only with insufficiency of the heart. Nephrosclerosis with its changes of the capillaries causes inspissation of the blood. Essential hypertension corresponds to the epinephrine type. The majority of arteriosclerosis patients have higher erythrocyte counts, but the blood pressure is still more increased.

Lumbar Puncture in Out-Patients.—Rahlwes and Loewenstein avoided practically all the unpleasant after-effects of lumbar puncture in out-patients by using a thin needle introduced inside a short thicker needle—the latter being used only for puncturing the skin and superficial parts. They point out that the cisterna puncture cannot become a routine procedure: not every one cares to work at a distance of 0.5 to 1 cm. from death.

Medizinische Klinik, Berlin

22: 909-946 (June 11) 1926

Death After Thyroidectomy. H. Riese.—p. 909.
Insulin Treatment. Jaksch-Wartenhorst.—p. 912.
Scarlet Fever Antiserum. E. Hoke and Kettner.—p. 912.
Water-Wheel Murmur in Pneumothorax. F. Krömeke.—p. 913.
Thrombophlebitis in Gonorrhea. I. Olivet.—p. 916.
Calculi of the Pancreas. M. Sondheimer.—p. 918.
*Malaria Treatment of Tabes. E. Hesse.—p. 920.
Alkali Treatment of Ulcer. W. Brednow.—p. 921.
Phrenicotomy. E. Gergely and S. Markovits.—p. 923.
*Gas Gangrene from Injections. K. Landé.—p. 924.
The Nerves of the Heart. Worobiew.—p. 925.
General Paralysis and Trauma. Oesterlen.—p. 926.
*Treatment of Headache. F. v. Kováts.—p. 930.
Balneotherapy. W. Schultz.—p. 932.
Enemies and Dispensaries. E. Loewy-Hattendorf.—p. 945.

Malaria Treatment of Tabes.—Hesse reports satisfactory results in treatment of tabes by malaria inoculation. The tabetic process seems to have stopped in the majority of his patients. Lancinating pains may become intolerable during the fever, but may disappear later.

Gas Gangrene from Injections.—Landé adds three cases of gas gangrene following subcutaneous injections to the twenty-six reported in the literature. Although two of his cases occurred on the same day, he believes that the fluids were sterile and that the germs had been present on the surface of the skin.

Treatment of Headache.—Kováts injects small doses (0.15-0.02 mg.) of epinephrine in tuberculous patients complaining of headaches.

Wiener klinische Wochenschrift, Vienna

39: 681-708 (June 10) 1926

Respiratory Murmurs. A. Winkler.—p. 681.
*Lead Paresis of Extensors. Adler-Herzmark and Selinger.—p. 683.
*Insulin in Cancer. V. R. Stühlern.—p. 685.
Death from Attack by Dogs. P. Schneider.—p. 686.
"Extirpation of the Uterus and the Menopause." B. Aschner.—p. 690.
Reply. L. Kraul.—p. 694.
Colloid Tests in Syphilis. E. Epstein.—p. 695. C'en.
*Mediastinal Flutter. C. Ewald.—p. 697.
Vomiting. F. Pineles. Supplement.—pp. 1-16.

Lead Paresis of Extensors.—Adler-Herzmark and Selinger found a unilateral weakness of extension of the hand and fingers in about a third of the lead workers examined. Other symptoms of lead poisoning were present in about one half of them. The test is simple (overextension against the physician's hand), and deserves attention.

Insulin in Cancer.—Stühlern injected fourteen inoperable cancer patients with insulin. In two of them, the tumors did not progress further for a while. Only small doses of insulin could be used, since the hypoglycemia syndrome occurred quite easily in these cachectic patients.

Mediastinal Flutter.—Ewald draws attention to this condition which may be rapidly fatal although it is easy to prevent this. In large penetrating wounds of the thorax (impalement, explosions, resection of a rib) the resistance to the passage of air through the trachea is much greater than in the wound. If the mediastinum is healthy, it flaps toward the healthy side and extreme dyspnea sets in—the "respiration" taking place only in the open pleural cavity. In extreme cases, one manipulation saves the patient: If the lung is seized and pulled out through the wound, the other lung can resume its function, even if the wound is not completely occluded. As a rule, however, it is sufficient to let the patient lie on the injured side, since the heart pulls the mediastinum down. Compressing the wound quickly (during expiration) with the hand or a folded wet towel, is also a help. In empyema, paracentesis is preferable at first. After a few days, the mediastinum becomes rigid from the inflammation, and the ribs may be resected without danger of the flutter. Blowing up the lung by the mouth with an air-jet apparatus may also be a good first aid.

Zentralblatt für Gynäkologie, Leipzig

50: 1425-1488 (May 29) 1926

*Placenta Culture in Vitro. H. Guggisberg and W. Neuweiler.—p. 1437.
*Peripheral Hypertension in Eclampsia. N. Louros.—p. 1439.
Gas Gangrene Embolism After Abortion. E. Strassmann.—p. 1447.
Incarceration of Gravid Uterus in Second Month. H. Graff.—p. 1456.
The Secondary Perineal Suture. T. Brandess.—p. 1459.
"Sedimentation Test in Balneotherapy." R. Grósz.—p. 1464.
Coitus and Premature Rupture of Membranes. Liubimowa.—p. 1466.
Spontaneous Cervicovaginal Fistula and Tear. P. I. Silin.—p. 1469.

Experiments in Cultivation of the Human Placenta in Vitro.—Guggisberg and Neuweiler succeeded in culturing human placental tissue of the third to the fifth month, obtained by uterotomy. Various culture mediums were used successfully, including pure human plasma. Both connective tissue and epithelial cells grew. Growth continued up to the eighth day, after which degeneration set in.

Explanation of the Rise in Peripheral Blood Pressure in Pregnancy and Eclampsia—Louros believes that constriction of the peripheral vessels in pregnancy is not primary, but

consequent on dilatation of the abdominal vessels. The latter is caused by a particular stimulation of the vagus, a vagotonia of the vascular system. Venesection in eclampsia relieves the abdominal vessels, and thereby lowers the compensatory high blood pressure. The changes in the liver and the kidneys in eclampsia could be explained by a vasoconstriction comparable to the peripheral compensatory vasoconstriction. Since, however, vagotonia exists in normal pregnancy, something more is required to explain the "hyperphenomena of pregnancy" seen in eclampsia. The influence of the fetus and the placenta and the rôle of the lipoids are being studied in this regard.

50: 1489-1552 (June 5) 1926

Interfereometric Examinations. H. Runge.—p. 1490.
*Sterilization for Pregnancy Anemia. A. Reist.—p. 1496.
Fatty Degeneration of the Endometrium. H. Hartmann.—p. 1500.
Primary Carcinoma of the Fallopian Tube. W. Beck.—p. 1503.
Injury from Compression of the Aorta. Haselhorst.—p. 1508.
Dicephalus Tribrachius Dipus. G. v. Zur-Mühlen.—p. 1514.
Treatment of Postpartum Hemorrhages. H. Lorenzen.—p. 1518.
Implantation of Fallopian Tube. R. Kiparsky.—p. 1523.
Tubal Insufflation; Sterility. A. Mandelstamm.—p. 1527.

Sterilization for Pregnancy Anemia.—From a consideration of published cases, including one of his own, Reist argues that sterilization is justified in anemia of pregnancy of pernicious type, where the patient already has several children and her history indicates functional weakness of the bone marrow. There is decided danger of recurrence of the anemia in a future pregnancy.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 2489-2608 (June 12) 1926

*Spontaneous Pneumothorax. A. J. A. Koelensmid.—p. 2490.
*Radiation of Heat from Skin. E. Sluiter and G. van Rijnberk.—p. 2496.
Congenital Cystic Lung and Bronchiectasia from Defective Development. Cornelia de Lange.—p. 2515.
Infectious Sore Throat with Lymphatic Reaction Persisting for a Month, with Mild Sepsis. Joustra.—p. 2525.

Spontaneous Pneumothorax.—Koelensmid accepts the spontaneous pneumothorax, in the case of hemorrhagic pleuritis described, as the first clinical manifestation of tuberculosis, but since the recovery from the pneumothorax there have been no further signs of an active process. In another case the spontaneous pneumothorax became encapsulated, and in a third case, there were two recurrences, six and eighteen months apart.

Radiation of Heat from the Skin.—Sluiter and Rijnberk describe the electric thermoscope devised for study of the temperature of the skin, covered or uncovered. The wide differences in the radiation of heat at different points of the skin may be explained by the nearness of large blood vessels to the surface, but this does not apply to all points. It is a mystery why the radiation seems to be particularly intense at certain points where the skin lies close to a bone surface, over the spine, over the sternum, over the tibia, and over the forehead. The radiation was exceptionally low at points with a thick layer of subcutaneous fat.

1: 2637-2752 (June 19) 1926

Comparison of Different Methods for Immunizing Against Diphtheria. H. Aldershoff.—p. 2638.
The Use of Bifocal Spectacles. A. Verwey.—p. 2646.
*Appendectomy and the Ileocecal Gland. R. J. Harrenstein.—p. 2652.
Prevention of General Paralysis. D. Mulder.—p. 2673.
A Third Ureter with Outlet in Vagina. Van Ramshorst.—p. 2684.

Benefit from Appendectomy.—Harrenstein was impressed by the way in which a weakly, listless child, always without appetite, began to thrive and eat with relish after the appendix had been removed. He had blamed himself for the unnecessary operation, as the appendix proved to be absolutely sound. The rapid and complete change for the better suggested that the operation might have improved mechanical conditions in the region. This assumption was confirmed by other experiences, and by study of mechanical conditions in the ileocecal valve region in fifty-seven child cadavers. His research has convinced him that insufficiency of the ileocecal valve is responsible for more or less of the disturbances we have been ascribing to chronic appendicitis. In tending the stump of the appendix, we have casually improved mechanical conditions for the valve. The structure of the junction between the large and small intestine is different in men and monkeys from that in other animals, due to the erect posture. The valve closes, and prevents the contents of the cecum from sliding back into the small intestine. Appendectomy improves mechanical conditions and removes the source of reflex interference with normal functioning of the valve.

Hospitalstidende, Copenhagen

69: 365-388 (April 22) 1926

*The Temperature of the Body. J. Ipsen.—p. 365.
*Light Treatment of Lupus. H. Haxthausen.—p. 379. C'en.—p. 389.

69: 389-412 (April 29) 1926

Opaque Substance by Mouth in Cholecystography. S. Kiær.—p. 398.
Case of Subastragaloid Dislocation of Foot. Jensen.—p. 406.

The Temperature of the Body.—Ipsen introduced several thermometers into the various deep tissues at operations under general anesthesia. The differences in the temperature at different points may amount to as much as several degrees. The highest figures were always found in the rectum and small pelvis; the temperature of the peritoneum kept constant even during long operations. The duration of the anesthesia did not seem to modify the rectal temperature. As the muscles are not working during the anesthesia, the temperature curve in them is not so instructive as under other conditions.

Finsen Light Treatment of Lupus.—Haxthausen relates that with the greater concentration of the therapeutic irradiation now possible by the improved technic shutting off the heat rays, fourteen patients out of sixty-four old inveterate cases of lupus have been cured, and thirty-one much improved. Preceding roentgen-ray treatment is responsible for the failures in some of the others. All the more recent cases have been cured, and in a shorter time than hitherto deemed possible.

Ugeskrift for Læger, Copenhagen

88: 525-558 (June 3) 1926

*Pathologic Modification of Deep Reflexes. Christiansen.—p. 525.
*Improved Technic for Light Treatment. S. Lomholt.—p. 541.
*Research on Carbohydrate Metabolism. XVI. S. A. Holbøll.—p. 547.
Injection Treatment of Varicose Veins. Alstrup.—p. 550. Idem. Meisen.—p. 551.

The Deep Reflexes in Diagnosis.—In this comprehensive study of pathologic modifications of the deep reflexes, Christiansen warns that the same intensity of the reflex movement which is normal in one person may represent attenuation or exaggeration in others. The age also has a great influence, and unless the patient's attention is actually diverted, latent reflexes may escape detection. With more effectual diversion of the attention, an apparently abolished deep reflex may prove to be actually exaggerated. His illustrations show his preferred technic, and he describes some instructive puzzling cases. In one young man with symptoms suggesting compression of the spinal cord, the knee-jerk was abolished on both sides but the foot clonus and cremaster reflexes were active, and also the Babinski toe sign on the left side. This located the process.

Improved Technic for Finsen Light Treatment.—Lomholt describes the simple means for filtering the concentrated arc light through a deep layer of water. This reduces the passage of heat while not interfering with the therapeutic action, and allows much larger doses.

Speed of Destruction of Dextrose in Blood.—Holbøll states that addition of fluoride to human blood prevents glycolysis completely, while oxalate partially checks it. Citrate and herudin do not seem to influence it. The destruction proceeds more rapidly at 37 than at 20 C.

88: 559-576 (June 10) 1926

Principles of Modern Obstetrics. S. A. Gammeltoft.—p. 559.
*Cancer of the Tongue. V. Schmidt.—p. 565.
Prophylaxis of Contagion from the Tuberculous. Schroeder.—p. 570.

A Sarcoma After Radiotherapy.—Schmidt discusses whether the cancer of the tongue was a mixed carcinoma-sarcoma from the first, or whether the roentgen and radium treatment after resection of the unmistakable carcinoma was responsible for the pure sarcoma that developed.